VALUE CHAIN COMPETITIVENESS ANALYSIS: ENTREPRENUERIAL BEHAVIOURAL PRACTICES DETERMINING BUSINESS SUCCESS IN UGANDA'S COMMERCIAL SUGAR AND FORESTRY INDUSTRIES

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Thesis submitted in the partial fulfillment for the award of a degree of Doctor of Philosophy Business Administration Graduate School of Business - University of Cape Town.

September 2017

DECLARATION

I Michael Imaka Mugabira hereby declare that this thesis is the product of my own work, both in concept and execution. It has not been submitted in the past, or is being submitted, or is to be submitted, in whole, or part thereof, for a degree at this University or at any other institution.

Signature…… Signed by candidate ……Date…23rd September 2017

Signature removed

This thesis has been supported under my supervision

Signature…… Signed ……Date……27/09/2017……..

Assoc. Prof. Dr. Richard Chivaka

DEDICATION

To the most wonderful people that I have had the privilege of knowing, my parents, Lovicer and Stephen Imaka. My mother's love, support, encouragement, investment in my education and teaching has inspired me from childhood to work hard and remain focused as a I fight a good fight to achieve soar to greater heights as an eagle.

ACKNOWLEDGEMENTS

I would like to express my gratitude to Associate Professor Richard Chivaka for his invaluable support throughout this research. His comments and guidance assisted me very much in shaping and re-shaping my thoughts in the right direction.

Many thanks go to Professor Ralph Hamman, Research Director, Graduate School of Business – University of Cape Town for his tireless efforts in organizing PhD colloquiums and personal consultations with him which sharpened my research skills, critical thinking and research analysis in using case study approaches. My sincere gratitude also goes to GSB-UCT administrative staff.

I would also like to extend my gratitude to Prof. Ted Baker and his team (Rutgers Business School—Newark and New Brunswick) for facilitating the PhD colloquiums in which I benefited a lot from their wealth of experience that they generously shared with us as students.

It is also my sincere desire to acknowledge foundation research knowledge and insights I received from Makerere University Business School. My regards to Dr. Yovani Moses Lubaale, School of Statistics and Planning formerly Institute of Statistics and Applied Economics (ISAE) Makerere University for his contribution in running statistical data analysis and testing data quality. My heartfelt sincerity also goes to Ms. Christine Namaganda of Makerere University Business School for her contribution as a research assistant and participating in data entry and coding.

Special thanks goes to Ms. Jennifer Renton of Durban with proof-reading the thesis, as well as very helpful suggestions. Invaluable comments received from South African Sugar Cane

Technologist Association, International Society of Sugar Cane Technologist, FAO-World Forestry Congress 2015 for research papers submitted and published cannot go unnoticed.

I would like to thank, from the bottom of my heart, the personnel of all the companies especially Saw Log Production Grant Scheme, Uganda Timber Growers Association, Kinyara Sugar Limited, Out-grower Sugar Cane Associations in Uganda that participated in this research. Without their cooperation and support, I would not have been able to undertake this research.

Lastly I am deeply indebted to my dear wife, Carolyne, for her unwavering support throughout the years that I spent doing this research. She endured, without complaining, the long hours that I spent working on this research. Many thanks go to my esteemed daughter Treasure-Favour for her support and understanding as she missed in Dad.

My gratitude thanks goes to ALMIGHTY FATHER, SON & HOLY SPIRIT for spiritual refreshing, protection, love, support, miraculous provisions and direction during the entire time that spent working on this thesis. **To GOD BE THE HONOR AND GLORY**

ABSTRACT

Global value chain (GVC) participation has been placed on a high level policy agenda by Development Partners as a prescription template for agri-business growth and competitiveness of developing countries, especially sub-Saharan Africa. Despite, the GVC participation popularity in application, there is an intense debate questioning why some countries are advancing in the global marketplace, while others are failing to do so. Actors' (entrepreneur's) behavior has been highlighted by the value chain fraternity researchers as an area of interest to investigate this phenomenon. The purpose of this research was to contribute to the understanding of the link between the entrepreneur's behavioral practices and better enhanced competitiveness in GVC, and as such offer some key insights into the emerging GVC theory.

Case Study Approach was the major research strategy complemented by the Survey. Polar types of Ugandan commercial sugarcane and forestry farmers were selected, namely high and low performing entrepreneurs. Principal unit of analysis was the entire value chain, analyzed at three levels: Micro (Farm Enterprises), Meso (Farmer/Miller) and Macro (National Policies & Regulatory Environment). Principal component analysis was run for purposes of grouping items. Empirical data was analyzed using within case analysis, and cross-case pattern analysis.

Theoretically and policy practice this study has brought into insight new research frontiers: (1) The finding of internality behavior demonstrates that entrepreneur's traits, characteristics and actions are basically behaviors that can be learnt, nurtured, and developed into a business culture, competencies and capabilities for enterprise growth, productivity and competitiveness.

Therefore, policy program designs should focus on igniting these behaviors which are already embedded in the minds of the entrepreneurs, and then supporting the strengthening of such behavioral changes for entrepreneurs to effectively participate in GVC in developing economies. (2) Institutional quality defined by the set of rules of the game with the associated governance power matters with respect to equitable wealth distribution and ultimately competitiveness. Findings of this study are being used to inform both the drafting of the National Sugar Bill 'Draft Uganda Sugar Act 2015' and improvement of the regulatory environment of Uganda's Forestry Industry Sector.

NATIONAL ANTHEM:

Oh, Uganda! may God uphold thee,
We lay our future in thy hand;
United, free for liberty
together we'll always stand.

Oh, Uganda! the land of freedom,
Our love and labour we give;
And with neighbours all
At our country's call
In peace and friendship we'll live.

Oh, Uganda! the land that feeds us,
By sun and fertile soil grown;
For our own dear land,
We'll always stand,
The Pearl of Africa

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LIST OF ACRONYMS AND ABBREVIATIONS

ADB	Asia Development Bank
AfDB	African Development Bank
ASEAN	Association of South East Asian Nations
BDCC	Buyer Driven Commodity Chains
CAD	Computer Aided Design
CF	Contract Farming
CFRs	Central Forest Reserves
CMB	Coffee Marketing Board
COMESA	Common Market for East and Southern Africa
CSFs	Critical Success Factors
DFID	Department for International Development
EAC	East African Community
EDI	Electronic Data Interchange
EU	European Union
FAO	Food Agricultural Organization
FDF	Forestry Development Fund
FDI	Foreign Direct Investment
FSC	Forestry Stewardship Council
GCCs	Global Commodity Chains
GCI	Global Competitiveness Index
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GoU	Government of Uganda

GSCs	Global Supply Chains
GVCA	Global Value Chain Analysis
GVCCA	Global Value Chain Competitiveness Analysis
GVCs	Global Value Chains
HPEs	High Performing Enterprises
ICT	Information Communication Technology
IMF	International Monetary Fund
ISO	International Standards Organization
ISSCT	International Society of Sugar Cane Technologists
KSL	Kinyara Sugar Limited
KSWL	Kakira Sugar Works Limited
LGs	Local Governments
LMB	Lint Marketing Board
LPEs	Low Performing Enterprises
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MFPED	Ministry of Finance, Planning and Economic Development
MNCs	Multi-National Corporations
MPEs	Medium Performing Enterprises
MTIC	Ministry of Trade, Industry and Co-operatives
MWE	Ministry of Water and Environment
NAFORI	National Forestry Research Institute
NDPI	National Development Plan I
NDPII	National Development Plan II
NFP	National Forestry Plan

NGOs	Non-Governmental Organizations
NIE	New Institutional Economics
NIT	New Institutional Theory
PDCC	Producer Driven Commodity Chains
PMB	Produce Marketing Board
R&D	Research & Development
RBV	Resource Based View
RIRDC	Australian Government's Rural Industries Research & Development Corporation
SADC	Southern African Development Community
SAP	Structural Adjustment Program
SASTA	South African Sugarcane Technologist Association
SBEL	Sango-bay Sugar Estates Ltd
SCOUL	Sugar Corporation of Uganda Limited
SMEs	Small & Medium Enterprises
SPGS	Sawlog Production Grant Scheme
TCA	Transactional Cost Analysis
TCE	Transactional Cost Economics
UBOS	Uganda Bureau of Statistics
UCB	Uganda Commercial Bank
UDC	Uganda Development Corporation
UEB	Uganda Electricity Board
UEDCL	Uganda Electricity Distribution Company Limited
UFP	Ugandan Forestry Policy
UIA	Uganda Investment Authority

UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations International Development Organization
USA	United States of America
USAID	United States Agency for International Development
USCTA	Uganda Sugar Cane Technologists Association
USD	United States Dollar
USMA	Uganda Sugar Manufacturers Association
UTGA	Uganda Timber Growers Organization
VC	Value Chain
WABCG	World Association of Beet and Cane Growers
WB	World Bank
WEF	World Economic Forum
WIR	World Investment Report
WST	World Systems Theory
WTO	World Trade Organization
WWF	World Wide Fund

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

"It is often assumed that an economy of private enterprise has an automatic bias towards innovation, but this is not so. It has a bias only towards profit" (Hobsbawm, 1969, pp.40, cited by Baumol, 1990, pp. 893).

This research provides an analysis of Uganda's agricultural participation in the global economy, using the Global Value Chain Analysis (GVCA) framework as used by authors such as Gereffi (1999) and Gereffi, Humphrey and Sturgeon (2005). The analysis is useful for examining the behaviour of key entrepreneurs and lead firms in setting the governance parameters responsible for shaping, coordinating and transforming global economic processes and inter-firm relationships. These behaviours can be exhibited by the entrepreneurial practices along the value chain, which can be classified as productive, unproductive and at times predatory in nature (Baumol, 1990; Dejardin, 2000; Mehlum, Moene & Torvik 2003; Douhan & Henrekson, 2007). This classification is reflective of the appropriation of economic rents and income distribution among chain actors - a core matter of investigation in this study. It is analysed in conjunction with the way key entrepreneurs control the diffusion of standards and production capabilities among upstream value chain players (Frederick & Gereffi, 2009). In conformity with Velde, Rushton, Schreckenberg, Marshall, Edouard, Newton and Arancibia (2005) this study contends that entrepreneurs may stimulate or hinder value chain competitiveness. This is assessed by the way they set governance parameters under which others within the chain operate. By setting parameters the entrepreneurs influence who acquires production capabilities, who accesses markets and how gains are distributed along the

value chain (Fredrick & Gereffi, 2009). Understanding these issues helps to facilitate the design of appropriate institutional policies and development interventions, which are often based on the assumption that poor and politically powerless upstream value chain actors suffer from high levels of exploitation by intermediaries (Velde et al., 2005).

According to Velde et al., (2005), contend that GVCA is deemed to be a more superior methodological analysis tool than the chain analysis applied by Porter's chain analysis model (Porter 1985), because he focused on value addition by examining the activities within and around the firm, with emphasis on firm competitiveness GVCA does not focus on firm competitiveness, but rather on how ties between firms are governed (Hammervoll, 2009) to achieve competitiveness of the chain as a whole (Velde et al., 2005). Further studies argue that competition itself is no longer about the firm, but the entire value chain of which the firm is only a part (Christopher, 1992; Lummus & Vokurka, 1999; Christopher & Towill, 2001).

Few empirical studies have used GVCA to obtain new information on the role and behaviour of entrepreneurs in driving the value chain in agricultural markets. Frederick and Gereffi (2009), Petkova (2006) and Oosterhuis, Molleman & Vaart (2005) all bemoaned the absence of research into the behaviours played by key chain actors in value chains, while Velde et al. (2005) highlighted the importance and influence of key entrepreneurs in determining the success and failure of value chains in the capitalist economy. This research was about examining the behavioural practices of entrepreneurs in stimulating or hindering the value chain competitiveness of Uganda's participation in agricultural global markets.

Uganda's economy is highly dependent on agriculture, however while 70% of Ugandans are employed in the sector, it contributes only 21% of the country's Gross Domestic Product (GDP) and 90% of total export earnings as per Uganda Bureau of Statistics {UBOS} report (UBOS, 2010).

Uganda covers an area of 241,550.7 square kilometers (sq. km), of which 41,743.2 sq. km (approx. 18%) are open water and swamps (UBOS, 2010). The country has two major unique engines for the development of agriculture - Lake Victoria (shared among three countries), which is the second largest freshwater body in the world after Lake Superior in North America, and the Nile River (serving 10 countries), which is the longest river in the world with its source in Lake Victoria. In addition to these two major water bodies, the country encompasses three other large lakes and approximately 160 minor lakes, rivers and wetlands (Ministry of Agriculture, Animal Industry and Fisheries {MAAIF}, 2011), some of which are well positioned on gentle meandering slopes to facilitate gravity irrigation.

> *"The Country's President said that Uganda is well engineered by GOD with rivers flowing through mountains to provide gravity water for agricultural production"* (Presidential Investors Round Table Meeting 25th November 2011, Speke Resort Munyonyo, Kampala).

Despite this abundance, 50 years after independence almost a third of the population (31.1%) were still living in despair and poverty (UBOS, 2011).

Up until the early 1970s Uganda's economic performance was on a par with countries such as South Korea, Ghana, Kenya and Malaysia as per the National Development Plan I (NDPI) report (NDPI, 2010), however while these countries have grown - with some on the path to becoming first world economies - Uganda has regressed. The NDPI report (2010) highlighted that the key to Malaysia's advancement in particular, was the transformation of agriculture from extraction to value addition through processing industries.

Before 1990, the production and marketing of agriculture and agricultural products in Uganda were addressed through established infrastructure in the form of marketing boards, co-operative unions and key state enterprises (parastatals), such as the Uganda Development Corporation (UDC), Coffee Marketing Board (CMB), Lint Marketing Board (LMB) and Produce Marketing Board (PMB). These were serviced by attendant sister bodies such as the Uganda Commercial Bank (UCB), Uganda Cooperative Bank and the Uganda Electricity Board (UEB). These organisations acted as links between producers (farmers) and markets. They also provided producers with affordable credit, improved inputs, storage facilities, hedging mechanisms to counter price fluctuations, extension advisory services and reliable market access. The sole reason for the existence of these organisations was to build farmers' capabilities and to foster the competitiveness of farmers' produce. Although there was a relative improvement in the standard of living and social welfare, the inefficiencies in the parastatals were significant, hence the enactment of liberal reforms in the post 1990s era. This meant that a formerly state-led economy was now embracing trade liberalisation and export-led development, as prescribed by the Bretton Woods Institutions and some development partners

Liberal reforms undertaken by Uganda were considered as the template economic policy prescription by the Bretton Woods Institutions and are founded on the assumptions that liberal reforms are the pathway for bridging the economic gap between 'North' and 'South' countries. It is a broad framework governance theory that is understood in the context of a neo-liberal ideology, comprising of trade liberalisation, market forces, free trade, 'getting prices right', the privatisation of public enterprises and the reduced role of the state in the economy (Schurman, 1996; Stiglitz, 1996). The assumption behind the theory is that long-term economic growth will be achieved through the pursuit of short-term efficiency gains (Schurman, 1996). The neo-liberal school of thought is very similar to Adam Smith's "invisible hand" theory, i.e. markets lead to efficient outcomes, thus contributing to the welfare of society as a whole.

Under the sponsorship of the World Bank (WB)/International Monetary Fund (IMF), the Government of Uganda (GoU) adopted the Structural Adjustment Programmes (SAPs), which necessitated the divestiture of public organisations, lifting of price controls, liberalising capital markets and creating the Uganda Investment Authority (UIA) under the investment code of 1991 to facilitate the processes for those interested in investing in the economy. The broad function of the UIA is to promote, facilitate and supervise investments in Uganda. Specifically, the UIA's Strategy and Business Plan (2007-2012) sets the key objectives, which include:

(1) Attracting value adding investment that brings technology, skills and jobs to Uganda;

(2) Promoting Uganda as a leading African investment destination;

(3) Providing serviced sites, buildings and competitive infrastructure to meet the needs of growing Ugandan-based businesses; and

(4) Stimulating and leading key stakeholders in creating a competitive business environment.

In order for the UIA to execute its mandate, a number of outward missions have been carried out in the USA, Europe, India, Thailand, South Africa and Middle East etc., with the intention of attracting foreign investors. The aim of the outward missions was to explain the trade and investment opportunities in Uganda, especially in agro-farming, fishing, forestry, mining, power generation and tourism. Attractive incentive packages have also been provided to prospective investors.

Uganda was ranked 58th in the world and 9th in Africa with respect to inward Foreign Direct Investment (FDI), according to the United Nations Conference for Trade and Development (UNCTAD)'s performance index of the World Investment Report {WIR}(WIR 2003). It also scored 4.96 out of 6.04 with regard to investor perceptions of investment protection and favourable policies pertaining to the remittance of dividends and profits. Data from the WIR (2006) illustrates that Uganda's FDI inflows grew from an average of USD 82 million in a period of (1990/2000) to USD 258 million in 2005. According to the Ministry of Finance, Planning and Economic Development {MFPED} (MFPED, 2007a), the share of investment in GDP increased from 12.4% in financial year 2002/03 to 17.9% in financial year 2006/07. By

2010, Uganda had a total FDI of USD 4,988 million (WIR, 2010). Much of this performance has been attributed to the acceptance of a capitalist economy, which often stimulates entrepreneurship and the growth of a private sector.

The growth of the private sector in Uganda also coincided with the new global phenomena of trade and production being organised in the form of Global Supply Chains (GSCs), which is synonymous with the Global Commodity Chains (GCCs) framework and has evolved into Global Value Chains (GVCs) framework. This framework is described as a set of inter-firm networks which connect manufacturers, suppliers and subcontractors in global industries, and ultimately to international markets (Bair, 2005; Gereffi et al., 2005; Sturgeon, Biesebroeck & Gereffi, 2008). According to Tijaja (2010, pp. 17),

> *"Proponents of GVC participation argue that by entering GVCs, developing countries and firms will gain access to foreign markets, capital, investment, technology and knowhow"*.

Since the mid-1990s, a body of literature has developed on GVC analysis and participation across North America, Europe, Africa, Asia and South America. Among the industries studied are apparel and textiles (Gereffi & Evgeniev , 2008; Gibbon, 2008; Evgeniev, 2009; Palpacuer, 2009; Starmanns, 2010; Goto, 2011; Goto, Natsuda & Thoburn, 2011; Morris, Staritz & Barnes, 2011) automobiles and electronics (Ivarsson & Alvstam, 2009; Hatani, 2010; Singh, 2010; Ozatagan, 2010; Azadegan & Wagner, 2011; Fortwengel, 2011; Kawakami & Sturgeon, 2011; Staritz, Gereffi & Cattaneo, 2011;), tourism and services (Lessmeister, 2009; Parnreiter, 2010; Fernandez-Stark, Bamber & Gereffi, 2011; Romero & Tejada, 2011), and agriculture and forestry products (Hough, 2007; Selwyn, 2007; Bitzer, Francken & Glasbergen, 2008;

Harper, 2008; Vieira & Maia, 2009; Gereffi & Christian , 2010; Gibbon, Ponte & Lazaro, 2010; Neilson & Pritchard, 2010; Ouma, 2010; Wiegratz, 2010; Challies & Murray, 2011, Kaplinsky, Terheggen & Tijaja, 2011; Aponte-Garcia, 2011; Ford & Larsen, 2011; Mugabira & Ssekiboobo, 2011; Riisgaard & Hammer, 2011; Ponte, Gibbon & Vestergaard, 2011; Mugabira & Chivaka2015).

However, participation in global production networks does not deliver the sustainable benefits envisaged by crusaders for liberal reforms. As countries and industries are exposed to fierce competition, some start experiencing resource depletion, falling profit margins, loss of jobs and environmental degradation, among other challenges. Studies also show that GVC participation and governance creates winners and losers, due to the distribution implication of gains along the value chain (Fitter & Kaplinsky, 2001a; Gereffi & Kaplinsky, 2001; Tijaja, 2010; Mugabira & Ssekiboobo, 2011). The winners are mainly the 'North' countries, while the losers are the 'South' countries. Although the issue of distribution in GVC participation is widely recognised theoretically (Gereffi & Kaplinsky, 2001; Gereffi & Fredrick, 2009), few empirical studies exist (Fitter & Kaplinsky, 2001b; Tijaja, 2010; Terheggen, 2010). Further, scholarly literature analysing GVC participation and governance in the perspective of entrepreneurial/chain behaviour is scanty, with the exception of Velde et al., (2005) and Oosterhuis et al., (2005).

This study intended to contribute to both the academic and policy debates on distribution implications in GVC participation and governance, especially for countries in the global South.

The study examined how and why entrepreneurial/chain actors' behavioural practices could be considered beneficial or disadvantageous to value chain competitiveness. The study further investigated the behaviour al practices of entrepreneurs in agricultural GVCs in Uganda, a country that has received little attention, given the fact that agriculture is not only the backbone of the economy employing more than 70% of the population and providing 90% of export revenue, but also provides food, energy and shelter – the basic human needs. While this study is not an authority on forecasting the future health of Uganda's economy, it provides valuable insights by opening up the debate on the appropriate policies and regulatory and governance models for trade in agricultural GVCs.

1.2 Problem statement

GVC participation for competitiveness is the name of the game today. The nature of the competitive game has gained prominence with the notion that in a globalizing economy; it is value chains that compete, and not firms. The globalisation of economic activities requires an understanding of the dispersed value creation activities that capture processes across space and time, which in turn has precipitated interest in GVCs. Global value chain participation for competitiveness is therefore imperative for the sustainability of firms, with participating firms being competitive while non-participating firms uncompetitive. This has placed GVC participation on a high level policy agenda amongst development partners as a prescription template for agri-business growth and the competitiveness of developing countries, especially in sub-Saharan Africa. Despite the popularity of GVC, there is an intense debate questioning why some countries are advancing in the global marketplace, while others are failing to do so.

The behavioural practices of actors (entrepreneurs) have been highlighted by the value chain research fraternity as an area of interest in regard to this phenomenon. The purpose of this research was thus to contribute to the understanding of the link between entrepreneurs' behavioural practices and enhanced competitiveness in GVCs, and as such to offer some key insights into the emerging GVC theory. This was achieved by investigating entrepreneurs' behavioural practices - both in the form of perceptions regarding critical success factors/critical management practices and competitive potential/competitive advantage factors - to explain the competitive performance (success/ failure) of agri-business enterprises participating in Uganda's Commercial Sugarcane and Forestry Value Chains.

1.3 General objective and research question

General objective: To examine how entrepreneurs'/actors' behavioural practices may stimulate or hinder the competitive performance of GVC participation in Uganda.

Major research question: How do entrepreneurs' behavioral practices determine the competitive performance of agri-business enterprises undertaking GVC participation in Uganda?

1.3.1 Specific objectives and research questions

1.3.1.1 Sub-theme 1: Critical success factors (CSFs) for value chain competitiveness

Specific objective 1: To assess whether there is a fit in perceptions regarding the critical success factors for value chain competitiveness amongst high, medium and low performing entrepreneurs undertaking GVC participation and between VC sectors.

Specific objective 2: To assess whether producers' competitiveness expectations are compatible with market expectations amongst high, medium and low producers and between VC sectors.

Research question 1: Why and how do perceptions of CSFs for competitiveness determine performance differences amongst high, medium and low producers and between VC sectors?

Research question 2: How are producers' competitiveness expectations compatible with market expectations amongst high, medium and low producers and between VC sectors?

1.3.1.2 Sub-theme 2: Equitable value chain sharing (miller – producer)

Specific objective 3: To examine the extent to which income distribution is perceived to be a challenge for competitive success amongst VC participants and between VC sectors, thus creating winners and losers.

Research question 3: How is the equitable value chain sharing of proceeds perceived as a challenge for competitive success amongst VC participants and between VC sectors, thus creating winners and losers?

1.3.1.3 Sub-theme 3: Entrepreneurial alertness and regulatory regime

Specific objective 4: To examine how entrepreneurial alertness could explain enterprise and VC sector performance differences, with possibilities for the shaping and re-shaping of governance structures.

Specific objective 5: To examine how institutional quality influences the emergence of the productive, unproductive and/or predatory behaviours that are reflected in the competitive success or failure of enterprises and VC sectors.

Research question 4: How does entrepreneurial alertness explain enterprise and VC sector performance differences, with possibilities for the shaping and re-shaping of governance structures?

Research question 5: How does institutional quality explain the emergence of the productive, unproductive and/or predatory behaviours reflected in the competitive success or failure of enterprises and VC sectors?

1.3.1.4 Sub-theme 4: Compliance with standards for market access

Specific objective 6: To assess perceptions with respect to compliance with standards for market access in explaining performance differences amongst high, medium and low producers and between VC sectors.

Research question 6: How do the perceptions of compliance with standards for market access explain the performance differences amongst high, medium and low producers and between VC sectors?

1.3.1.5 Sub-theme 5: Vertical and horizontal collaboration for the diffusion of supplier production capabilities

Specific objective 7: To examine the extent of vertical and horizontal collaboration for the diffusion of supplier production capabilities in explaining performance differences amongst VC participants and between VC sectors.

Research question 7: How does vertical and horizontal collaboration for the diffusion of supplier production capabilities explain the performance differences amongst VC participants and between VC sectors?

The above specific objectives and research questions were not viewed in isolation from one another, but were rather addressed simultaneously to give a more complete picture of the agri-business, sugar and forestry industry dynamics in Uganda. The study employed a multiple-method approach to gather empirical evidence. The survey instrument collected information about entrepreneurs' and/or chain actors' practices in the Ugandan commercial sugar and forestry value chains, i.e. it established the context in which the behaviour of entrepreneurs in value chains is studied. The interview protocol, together with observations and a documentary review, provided an in-depth understanding of how and why the behavioural prcatices of entrepreneurs stimulates or hinders value chain competitiveness for Uganda's agri-business enterprises undertaking GVC participation.

1.4 Scope

The research focused on two agri-business value chain sectors, namely sugar and forestry. The study examined mainly entrepreneurs involved in primary production, categorising them into high, medium and low VC performers. Millers and/or buyers and policy/regulatory-related organisations based in the domestic value chain were also examined to obtain data for triangulation. Chain actors beyond Uganda's borders were not explored, but information relating to the value chain was accessed from their representatives in Uganda and using secondary literature.

1.5 Thesis structure

The thesis is divided into eight chapters. Chapter one which is the introduction informed readers on what brought about the need for the study (problem statement), what it intends to

achieve (objectives), and the coverage. Chapter 2 reviews the relevant literature and related theoretical frameworks while chapter 3 discusses the methodology used in this study. The results are presented in chapter 4 to chapter 7. In brief, chapter 4 presents a narrative perspective of Uganda's commercial sugar and forestry value chain industrial sectors; chapter 5 and 6 presents the field data analysis results. Chapter 7 provides a comprehensive discussion of results presented in chapters 5 and 6. Lastly chapter 8 presents the summary of the findings, conclusions and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the relevant literature and related theoretical frameworks. It also details the historical evolution of the global value chain framework as the major analytical framework for this study. The chapter finally gives a summary of the inter-dependence of the theoretical frameworks which mitigates their weaknesses.

2.2 Overview of theoretical frameworks informing this study

This study applied the following related theoretical frameworks that explain the formation of inter-company value chain relationships. The Transactional Cost Analysis or Economics (TCA/TCE) by (Williamson 1975; 1979) explains why do firms/enterprises exist, i.e., motivations for business start-up and/or growth. The Entrepreneurship Behavioural Approach by (Gatner 1989; Baumol 1990), offers insights on why do entrepreneurial firms differ, i.e., the theory assists in assessments of, traits, perceptions and capabilities for achieving productivity gains. The New Institutional Theory (NIT) by (Williamson 1998, North 1992) basically defines the rules of the game and governance institutions governing the play of the game by the value chain actors. The aim of NIT is to explain the nature of institutions, how they emerge, what purposes they serve, how they evolve over time, and how, if at all, they could be reformed for market/value chain efficiency. The application of the Global Value Chain Analytical (GVCA) diagnostic framework (Gereffi 2005) assists in assessment of how do firms/enterprises interact, i.e., mapping inter firm-relationships and the flow of goods & information, identification of value chain constraints and possible interventions especially in vertical linkages. The cluster approach complements the GVCA by analyzing the horizontal relationships between firms.

Therefore, this study applied these theoretical frameworks as they are seen reinforcing each other in the assessment of Uganda's agri-business value chains.

2.3 The global value chain analytical framework and its evolution

A value chain (VC) is most commonly defined as:

> *"…the full range of activities which are required to bring a product or service from conception, through the different phases of production […and…] delivery to final consumers, and final disposal after use"* (Kaplinsky & Morris, 2000, pp. 4).

A VC is a useful unit of analysis seen in the literature on the evolution and organisation of the world capitalist economy (Bair, 2008; Tijaja, 2010). After mapping a VC, researchers can apply it as a case study to analyse the spatially dispersed and organisationally complex global production systems (Tijaja, 2010). VC analysis differs from comparable market analytical approaches in that it examines the dynamics of firms/countries within global production networks and focuses on productive systems as opposed to sectors or industries in isolation (Farfan, 2005). Most importantly, a VC can be used to analyse how relationships amongst participants are governed, enabling a deeper analysis to be done on the highly abstract notion of economic globalisation (Gibbon, Bair & Ponte, 2008). In this case study, the VC approach was used to dissect and obtain information on what drives entrepreneurship in Uganda's agricultural sector by finding answers to the research questions listed in subsection 1.3.

While VC analysis itself is theoretically neutral, it enhances the theoretical understanding of the working of the world capitalist economy. It allows for the identification of industry actors,

mapping of their positions, and accounting of individual actors' activities, and thus the governance structure of production that dictates how the chain operates and who controls the diffusion of technology, standards, value creation and distribution of rent along the GVC (Gereffi & Christian, 2010; Tijaja, 2010; Terheggen, 2010). At a more practical level, information obtained assists in the design of appropriate policies and development interventions, thus improving the position of developing countries' firms/industries, workers and other marginalised groups in the specific GVC (Velde et al., 2005; Fredrick & Gereffi , 2009; Gereffi & Christian, 2010).

The GVCA theoretical framework helps to explain governance patterns in global value chains, which emerged as a result of globalisation of production and trade. This has fueled the growth of industrial capabilities in a number of developing countries, as well as the vertical disintegration of transnational corporations, which are focusing on core competencies and high value addition activities while relegating non-core activities to other firms, coupled with reduced direct ownership (Gereffi et al., 2005). This form of shift has produced a governance network situated between arm's length markets on the one hand, and large vertically integrated corporations, referred to as hierarchies, on the other. The purpose of this thesis is to utilise and improve on the GVCA for a better understanding of the shaping and re-shaping of governance structures in sectors producing for global markets; structures referred to as 'global value chains' (Gereffi et al., 2005). The evolution of the GVC structures affects not only the fortunes of firms and industries, but also how and why countries advance – or fail to advance – in the global economy (Gereffi et al., 2005; Sturgeon, 2008). A short summary of the evolution

and variants of commodity chain approaches from which the GVCA has emerged will give a reader a clear understanding of the historical development. The next section illustrates the evolution from the world system theory to global commodity chains..

2.3.1 Evolution from the world system theory to global commodity chains

In a 1977 article by Terrence Hopkins and Immanuel Wallerstein, the authors defined the term 'commodity chain' as *"a network of labor and processes whose end results in a finished commodity"* (Hopkins & Wallerstein, 1986, pp. 159). The term 'commodity chain' has its roots in the World Systems Theory (WST) developed in the 1970s (Wallerstein, 1974).

WST posits that countries are located in the core, periphery, and semi-periphery of the global economy, with their position reflecting their development capabilities (Gereffi & Christian, 2010). WST is interested in nation-states (i.e. countries) - the fundamental principle being how power and hierarchy are embodied in the relations between nation-states and their position in the global economy. Like the WST, GCC analysis addresses the issue of who controls global trade and industry, and how agents locked into lower-value segments of trade and industry can break out of this situation (Gibbon, 2000). Unlike WST, GCC analysis of commodity chains is less concerned with the holistic macro structure of the world capitalist economy and more with the meso-level structure, especially with sets of inter-firm networks that connect manufacturers, suppliers and sub-contractors in global industries to each other, and ultimately to international markets (Bair, 2005).

While global commodity trade has existed since the 16th century, GCC scholars contend that global production systems underwent a fundamental transformation after the second world war, becoming increasingly more functionally integrated and geographically dispersed through trade intensification in semi-finished products (Tijaja, 2010). This laid the foundation for the addition of 'Global' to 'Commodity Chain', to form the term 'Global Commodity Chain' (GCC) by Gereffi and others in the early 1990s (Gereffi & Korzeniewicz, 1994).

GCCs have made a significant contribution to commodity chain studies in three areas: methodology, theory and policy. First, the development and application of the GCC approach is a *methodological* advance because it provides a basis for both academics and practitioners interested in global industries to map and analyse the spatially dispersed and organisationally complex production networks that are an important part of economic globalisation (Tijaja, 2010). The framework assists in tracing the path of a commodity – be it fish caught in Lake Victoria in Uganda (sub-Saharan Africa) and sold in European Union (EU) chain supermarkets, garments sewn in Hong Kong from Egyptian cotton, or an assembly plant of electronic equipment in Japan from components produced in Latin America – forming a basis from which to study and operationalise the global-local nexus. The GCC approach permits product traceability in the globalising economy, directing attention to specific locations where particular production processes take place, while simultaneously shining light on how these discrete locations and activities are inter-connected to form a commodity chain. Through its focus on locality and place the GCC departs from WST; the former is principally concerned with finding ways of improving industrial upgrading; that is improving skills, and processes

(Humphrey & Schmitz, 2002) for developing exporters and places more emphasis on the role of firms as the change drivers and organising agents in the capitalist economy, while the latter, with its macro-orientation, dismisses this as a developmentalist 'illusion', claiming the systematic unequal exchange will simply reproduce hierarchies in the world capitalist economy (Hopkins & Wallerstein, 1994; Bair, 2005).

Second, GCC has contributed theoretically to the understanding of power relation dynamics among chain actors. Further illustration at this point calls for a brief review of the GCC approach. Gereffi and Korzeniewicz (1994) identified four key structures that shape GCCs:

> (1) an input-output structure (the process of transforming raw materials into final products);
>
> (2) geographical (referring to spatial dispersion or concentration of activities within and across locations);
>
> (3) a governance structure (referring to power relations within the chain that control production processes and also determine appropriation and distribution of economic rents from the value created);
>
> (4) an institutional context (described by norms, values, and regulatory frameworks within which firms operate).

The concept of governance among the four has received much attention (Gereffi et al., 2005). Gereffi described the power relationships using the term global chain governance. Governance of the value chain is defined as

> *"authority and power relationships that determine how financial, material, and human resources are allocated and flow within the chain"* (Gereffi & Korzeniewicz, 1994, pp. 97),

However most of the research agenda on governance analysis has been done in tourism, apparel and textiles, footwear, automobiles, electronics, plastics and a variety of agricultural commodities. Interestingly, most of these studies were carried out in Asia, Latin America, North America and Europe. The necessity of studying agricultural commodity chains in developing countries was highlighted by Cramer (1999), after which different researchers and organizations such as World Bank (WB) and African Development Bank (AfDB), United Nations Industrial Development Organization (UNIDO) took up the challenge and studied: horticulture (Dolan & Humphrey, 2000; Vagneron, Faure & Loeillet, 2009; Gibbonet al.,, 2010; Kaplinsky et al., 2010; Ouma, 2010; Fold & Larsen, 2011), forestry (Velde et al., 2005; Teischinger, 2009), fishing (Mugabira & Ssekiboobo, 2011; Mugabira & Chivaka, 2015), coffee (Ponte, 2001; Fitter & Kaplinsky, 2001a; Wiegratz, 2010; WB, 2010; AfDB, 2015), textiles and apparel (UNIDO, 2009) and cocoa (Laven, 2005; Fold, 2001; Roldan, Fromm & Aidoo, 2013).

Yet the focus of these studies has been on lead firms in the chain such as manufacturers, processors and buying companies operating in a formal economy. Few address the issue of suppliers (producers) who make up the bulk of the chain actors, operate in an informal economy and form the weakest 'link' in the chain (Laven, 2005). This is a lacuna that this thesis intends to fill. It can be argued that the bias in many existing studies has contributed to a widening income gap between international buyers and/or their local representatives and the

local suppliers operating in buyer-driven commodity chains. This economic imbalance is translated at the macro-level, possibly explaining why countries advance – or fail to advance – in the global economy.

Further, the GCC research on governance is credited for shining light on how global industries are governed without direct ownership. The governance concept elaborates on the inter-firm network as an organisational form that is neither a market nor a hierarchy, although it may exhibit characteristics of each. Gereffi (1994) made a distinction between two organisational forms: Producer–Driven Commodity Chains (PDCC) and Buyer–Driven Commodity Chains (BDCC). The former tend to have high barriers of entry and are characteristically more capital/technology-intensive production and economies of scale industries such as automobiles, electronics, telecoms and aeronautics, in which powerful manufacturers control and often own several tiers of vertically-integrated suppliers. On the other hand, the latter (BDCCs) tend to have low barriers to entry, such as agriculture, forestry, apparel and textiles, where fur-flung subcontracting networks are managed with varying degrees of closeness by designers, retailers and brand-name firms that market, but do not necessarily make, the products that are sold under their name (Gereffi, 2001; Tijaja, 2010).

Third, GCC research has enormously contributed to policy, mainly through the recent work done by the so-called global value chains (GVC) emanating from GCC. The GVC approach has focused on finding ways to leverage the insights afforded by the GCC approach into effective policy designs and interventions that can improve local firms' competitiveness in value chains (Bair, 2005). The value chain literature describes the process of local firm improvement as 'chain upgrading'. "Understanding how value chains operate is very important

for developing country firms and policy–makers, because the way chains are structured has implications for new entrants. How can economic actors gain access to the skills, competencies and supporting services required to participate in global value chains? What potential is there for firms, industries, and societies from developing world to "upgrade" by actively changing the way they are linked to global value chains?" (Gereffi, Humphrey, Kaplinsky & Sturgeon, 2001, , pp. 2). Local and national governments, as well as international institutions such as the United States Agency for International Development (USAID), the Department for International Development (DFID) and the United Nations International Development Organization (UNIDO), amongst others, have expressed an interest in the answers to these questions, viewing the GCC approach as a paradigm that can orient and inform policy (Gereffi & Fredrick, 2009; Bair, 2005). The role played by the Saw Log Production Grant Scheme (SPGS), a joint facility of the European Union, the Norwegian government and the Ugandan government, will give insights into policy design and interventions experienced in Uganda's forestry value chains compared to the coffee and fish value chains (which are devoid of such arrangements).

2.3.2 Evolution from global commodity chains to global value chains

GVC analysis developed out of seminal works on GCC in the 1990s, which tied the concept of value-added chains directly to the global organisation of industries (Gereffi & Korzeniewicz, 1994). The GVC approach emerged during the research network workshop titled 'The Value of Value Chains: Spreading the Gains from Globalization' of September 2000 held in Bellagio, Italy, where scholars agreed to develop a common language for promoting a research agenda

on the study of production networks in the global economy. As a paradigm of thinking, GCC is only one among the several network or chain-based approaches to the study of global economic industrial organisation that are popular today (Tijaja, 2010). Other constructs that have been applied include international production networks (Borrus, Ernst & Haggard , 2000), global production networks (Ernst & Kim, 2002; Herderson, Dicken, Hess, Coe & Yeung , 2002), global production systems (Milberg, 2004), the French *filiere* concept (Raikes, Jensen and Ponte, 2000) and supply chains (Christopher, 1992; Christopher & Towill, 2001; Lummus & Vokurka, 1999). Among all these competing approaches, the GVC was adopted at the Bellagio workshop, Italy because it was perceived as being the most inclusive of the full range of possible chain activities from a commodity to the end products, (Gereffi et l., 2001).

Gereffi et al. (2005) advanced the value chain research agenda by developing a formal theory of value chain governance. The GVC theory identified a typology of five governance structures that describe the network relationships linking suppliers in global industries to lead firms (Gereffi et al., 2005; Sturgeon et al., 2008). Gereffi et al. (2005), Frederick and Gereffi (2009) elaborated further and distinguished between five chain governance structure types that firms apply to govern linkages between value chain activities:

1. *Markets.* Market governance involves transactions that are relatively simple. Information on product specifications is easily transmitted, and suppliers have the capability to make products with minimal input from buyers. These are typically arms-length exchanges associated with repeat transactions with little or no formal cooperation between actors, and the cost of switching to new partners is low for both

producers and buyers. The central governance mechanism is price rather than a powerful lead firm.

2. *Modular value chains.* Modular governance occurs when complex transactions are relatively easy to codify. Suppliers have the capability to make products to a customer's specifications and take full responsibility for process technology using generic machinery that spreads investments across a wide customer base. This keeps switching costs low and reduces transaction-specific investments' 'asset specificity' and therefore a buyer's need for direct monitoring and control.
3. *Relational value chains.* Relational governance occurs when buyers and sellers rely on complex information that is not easily transmitted or learned. This necessitates frequent interactions and knowledge sharing between parties. Such linkages generate trust and mutual dependency regulated through reputation, social and spatial proximity, family and ethnic ties, and the like. It can also be handled through mechanisms that impose costs on a party that breaks a contract (Williamson, 1983). Despite mutual dependence, lead firms still specify the requirements and thus have the ability to exert some level of control over suppliers. Producers in relational chains are more likely to supply differentiated products based on quality, geographic origin or other unique characteristics. Relational linkages take time to build and require high levels of explicit coordination, which makes switching costs to new partners high.
4. *Captive value chains.* Captive chains occur when the ability to codify information and product specifications' complexity are both high, coupled with low supplier capabilities. These networks are characterised by a high degree of monitoring and control by the lead firm, creating a build-up of transactional dependence, as lead firms

seek to lock-in suppliers in order to exclude others from reaping the benefits of their efforts. Suppliers thus face significant switching costs and are 'captive'. Captive inter-firm linkages control opportunism through the dominance of lead firms, which also ensure that suppliers receive fair treatment and an equitable share of the market price to make exit an unattractive proposition.

5. *Hierarchy.* This type of governance describes chains that are characterised by vertical integration and managerial control within lead firms that develop and manufacture products in-house. This usually occurs when product specifications cannot be codified, products are complex and competent suppliers cannot be found. This type of governance is also driven by the need to exchange tacit knowledge between value chain activities as well as to protect key resources such as intellectual property.

Gereffi et al. (2005), Frederick and Gereffi (2009) suggested that the form of governance can change as an industry evolves and matures. The dynamic nature of the five governance typologies is due to the possible combinations resulting from the variations (measures such as 'low' or 'high') of three independent variables, as presented in Table 2.1:

1. *Information complexity.* Refers to the intricacy of inter-firm information and knowledge transfer required for transactions. This is vital because suppliers working with complicated product and process specifications are more difficult to control and coordinate, thus increasing switching costs. For this reason, transaction costs are reduced through standardization and codification.

2. *Information codification.* Refers to the extent to which complex information and knowledge is converted into industry-wide standards through codification and transmitted efficiently along the chain without a transaction specific investment. Developments in information technology tools such as electronic data interchange (EDI) or computer aided design (CAD) enable complex data to be easily handed off between value chain partners.
3. *Supplier capability.* Refers to suppliers' ability to meet all buyers' transaction requirements. These may include reliability in quality specifications, quantity, on-time delivery, cost, and labour and safety standards. Suppliers need access to support services such as input, equipment maintenance and upgrades, reliable transportation and certification assistance to develop new capabilities. If supporting markets are not in existence and/or cannot offer affordable and effective services, then suppliers will depend more heavily on buyers to meet these needs and vice versa.

Table 2.1: Key determinants of global value chain governance

Governance type	**Complexity of transactions**	**Ability to codify transactions**	**Capabilities in the supply-base**	**Degree of explicit coordination and power asymmetry**
Market	Low	High	High	Low
Modular	High	High	High	↕
Relational	High	Low	High	↕
Captive	High	High	Low	↕
Hierarchy	High	Low	Low	High

Source: Gereffi et al. (2005)

Table 2.1 presents the interplay between the governance types and the three variables. For instance, governance by ordinary market transactions takes place when product specification is simple, transactions are simple and easily codified, and supplier capability is high to produce products with little input from buyers, thus minimising specific inter-firm relationships. At the other extreme, a hierarchical governance structure (in-house production) occurs when product specifications are highly complex and cannot be codified, while competent suppliers cannot be found.

In between these extremes, modular value chains arise when complex product specifications can be easily codified. Relational value chains exist when information on complex products is not easily codified, but suppliers with high capabilities are accessible by lead firms. Finally, captive value chains are associated with complex product specifications that can easily be codified through detailed instructions to enable suppliers with low capabilities to produce.

The existence of these governance types renders a spectrum of explicit coordination and power asymmetry (as shown in the last column of Table 2.1) between buyers and suppliers, running from 'low to high' in the cases of markets and hierarchies respectively. The fact that the governance types illustrated above illuminate how power operates in global value chains merits elaboration (Gereffi et al., 2005). For instance, in global captive value chains, power is exercised directly by lead firms of suppliers. This is analogous to the direct administrative control exercised by multi-national companies (MNCs) over their subsidiaries or the affiliates of a vertically integrated firm (referred to as a hierarchy in this study). Such direct control reflects a high degree of explicit coordination and a large power asymmetry, with the lead firm and/or buyer (exercising top management) being the dominant party. In relational global value

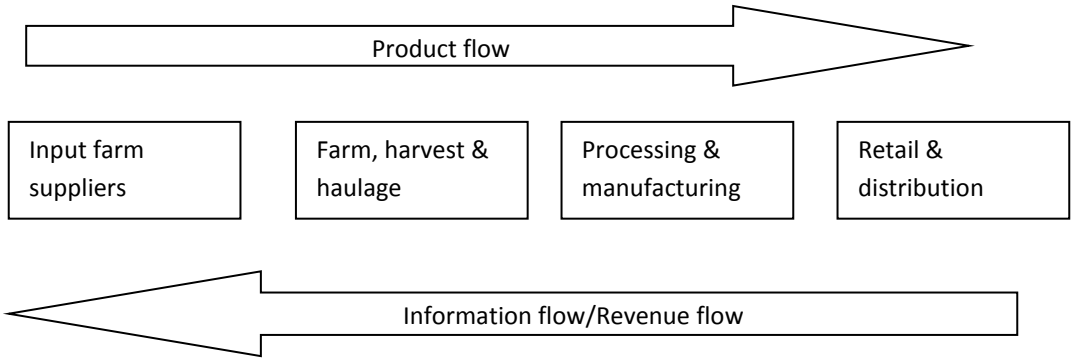
chains both parties contribute key competencies, resulting in symmetrical power (balance of power) between the partners. Relational global value chains exhibit a great deal of explicit coordination, but this is achieved through intimate dialogue between more or less equal partners, contrary to the more unidirectional flow of information and control between unequal partners, as is the case with captive global value chains and hierarchies. Gereffi et al. (2005) went on to argue that power asymmetries are low in both modular global value chains and markets. This is attributed to low switching costs, which enable buyers and suppliers to work with multiple partners.

The GVC approach has also come under attack with the following limitations being cited: (1) it does not take into account many of the factors influencing global trade (Bernstain & Campling, 2006; Gibbon et al., 2008); (2) the GVC approach focuses primarily on MNCs, with little emphasis on the regulatory role of the state (Talbot, 1997); and (3) it fails to recognise that actors operate within certain rules set by non-chain actors in the form of trade rules and standards, i.e. tariffs, quotas, quality standards, labour and environmental standards (Schmitz, 2005).

Despite the above critiques, the GVC is recognised as an effective tool for tracing product flows, showing the value adding stages and identifying key actors and their relationships with other actors in the chain, thus being actor-oriented (Schmitz, 2005). This framework has provided invaluable contributions in the context of four distinct industries: bicycles, apparel, fresh vegetables and electronics. This study examined the value of this framework in the context of explaining the behavioural practices of entrepreneurs in the sectors of sugar and

forestry products value chains. This explanation used a simplified map (see figure 2.1 below) of an agro-value chain that was broken down into four broad steps: (i) input farm suppliers; (ii) farm and harvest; (iii) processing and manufacturing; and (iv) retail and distribution.

Figure 2.1: Simplified agro-value chain map



Source: Author

2.3.3 Transition towards the global value chain competitiveness analytical (GVCCA) framework

Businesses participate in GVCs to improve their competitiveness. Competitive pressure is increasingly being felt due to the globalisation of industries, as they strive to create and capture value across processes that are dispersed in space and time through coordinated global value chains (Gereffi & Korzeniewicz, 1994). Gereffi et al. (2005) identified five typologies for value addition and the coordination of global value chains in the world economy. The typologies oscillate on a continuum of two extremes, i.e. arm's length markets and hierarchies. As pressure for competition intensifies with globalisation, so competitiveness determines international trade flows, location of production facilities, capital in-flows and out-flows, and foreign direct investments (Sasatani, 2009). For this reason, nations, regions, industries/sectors

and firms compete to capture value (profits, margins), lure investments, and win the hearts and minds of customers in markets across space and time in a globalising world. In this context of a competitive game, competitiveness describes the economic strength of a country, industry or a firm with respect to competitors as value for money (goods, services, skills and ideas) moves freely through coordinated VCs (Murths & Lenway, 1994). Consequently, highly competitive value chains are winners while less competitive value chains are losers in the global competitiveness game.

2.3.3.1 Theoretical measures of competitiveness

Competitiveness remains a vibrant contentious public debate issue for growth by both practitioners and academicians. Krugman (1994, pp. 30) argued that *"obsession with competitiveness at (the) national level is not only wrong but dangerous"*. Other studies contend that, despite its widely acknowledged importance, the concept of competitiveness itself is greatly misunderstood (Asian Development Bank {ADB}, 2003; Kohler, 2006; Smit, 2010; Aiginger, Barenthaler-Sieber & Vogel, 2013). This sentiment was also acknowledged by the World Economic Forum (WEF) in its Global Competitiveness Report (GCR) 2004-5, which measured the competitiveness of countries or blocs (WEF 2004). On the other hand, Porter (2004) viewed competiveness as a major pathway for national economies to benefit from market liberal reforms. Yet despite this disagreement between Krugman (1994) and Porter (2004), who are both considered gurus of competitiveness, they agreed that it is firms that compete, not nations. This view is contradicted by the supply chain management discipline, however.

Christopher (1992), Lummus and Vokurka (1999), Christopher and Towill(2001), and Chivaka (2003) asserted that supply chains compete, but not firms.

With the transition from supply chains to value chains, this study intends to build on this idea by asserting that value chains compete.

Competitiveness at value chain level is of great importance to both practitioners and academics. According to Rao and Holt (2005), competitiveness at value chain level means improved efficiency, quality improvement, product improvement and cost savings. Other authors contend that productivity growth is the central factor for competiveness (Vukovic, Jovanovic & Dukic , 2012). Porter (1990) defined competitiveness at the organizational level as productivity growth that is reflected in either lower costs or differentiated products that command premium prices. Studies have also shown that companies, industries, or nations with the highest productivity could be seen as the most competitive (McKee & Sessions-Robinson, 1989).

The government of Uganda, through the Competitiveness and Investment Climate Strategy, measures competitiveness according to

> *"a sustained increase in productivity, efficiency and innovation throughout the commodity/service value chain, and emphasises the need for a shared understanding of joint and collective action between and amongst the private and public sector actors"* (MFPED, 2007 b pp. 6).

This definition suggests that competitiveness spans across the entire value chain, necessitating a comprehensive approach to understanding the concept. Buckley et al. (1988) offered just

such a comprehensive approach, emphasizing that competitiveness should be examined using a framework that has three parts: (1) Competitive Potential – examines competeiveness as comprising the generation and maintenance of competitive advantage; (2) Management Process – examines competitiveness as the process of managing decisions and processes in the 'right way'; and (3) Competitive Performance –examines competitiveness as the ability to perform well.

This implies that competitiveness can be studied as both a dependent and independent variable, as they can be seen influencing each other. Therefore, as pointed out by Mehrotra and Kant (2010), a comprehensive evaluation of competeiveness must benchmark the target entity on all three areas. This study adopts a comprehensive approach to evaluating competitiveness, and aims to contribute towards adding knowledge to the emerging Global Value Chain Competitiveness Analytical Framework. Competitive potential and management processes will be treated as independent variables and competitive performance as a dependent variable. The independent variables will be examined in the context of entrepreneurship behavioural practices, with the purpose of predicting the competitive success or failure (competitive performance) of the Ugandan agri-businesses involved in commercial forestry and sugarcane value chains.

2.3.4 Value chain governance concept

The GVCA approach incorporates power relations into the study of global production systems through the application of the governance concept. An understanding of value chain governance was crucial in this study as the author sought to identify the role played by private

enterprise and/or entrepreneurs in structuring and re-structuring Uganda's agri-business value chains such as sugar and forestry.

GVC governance, simply characterises the relationships or linkages among participating stakeholders in the value chain. It refers to the power of a stakeholder to determine, control and/or coordinate the activities of other actors in the value added chain (Fredrick & Gereffi, 2009). Perrow (2002) infers that power is an integral part of economic life. By borrowing an adage from the rule of the jungle - only the strongest through adaptation survive. This holds true in the daily economic life of mankind. The effects of power or a lack of power can be discerned at all levels in the value chain. Non-firm chain actors including national policy and regulatory bodies and multi-lateral institutions such as the World Trade Organisation (WTO), shape GVCs through the enforcement or lack of enforcement of rules. Consumers have purchasing power and workers also have power in cases where they are organised into trade unions.

At the firm level, power is wielded in different ways and amounts by various actors in the value chain. The value chain's actors include lead firms who mainly yield the governance power (Sturgeon, 2008). Gereffi and Korzeniewicz (1994) made the first categorisation of GVC governance power of lead firms by contrasting them between Producer Driven Commodity Chains (PDCC) and Buyer Driven Commodity Chains (BDCC). The former tend to have high entry barriers due to intensive capital and technology, while the latter is characterised by low entry barriers, as producers are bound to buyers' decisions through the functions of design and marketing.

Lead firms wield the purchasing power in BDCCs; buyers place orders and specify standards, deliveries, buying prices etc., hence appropriating higher economic rents. Suppliers may also wield power in the value chain if they possess market and technological dominance. This has been found to take place particularly in high-tech industries such as electronics, automobiles, telecoms etc. (Gereffi & Korzeniewicz, 1994). With respect to commodity chains and/or natural resource-based sectors, primary producers have been found to lack power, ultimately affecting the appropriation of economic rents and distribution of gains (Peppelenbos, 2008; Mugabira & Sekiboobo, 2011; Mugabira & Chivaka, 2015).

There has been a progressive shift in global production organisation, as producer-driven chains have become more buyer-driven, including through outsourcing. This enabled Gereffi et al. (2005) to move towards a richer theory-based typology of GVC governance. The GVC theory based on the dichotomous (high-low) variation in three independent variables - the complexity of information to be exchanged between value chain tasks; the codifiability of that information; and the capabilities resident in the supply base - gave rise to five generic governance patterns: market, modular, relational, captive and hierarchies.

The GVC governance framework was developed in the context of bicycles, apparel, fresh vegetables and electronics (Gereffi et al., 2005), and more recently the automotive industry (Sturgeon et al., 2008). The framework underscores the importance of transaction costs in the face of asset specificity, as well as the different motivations for constructing inter-firm

governance relationships. This study examined the value of this framework in the context of explaining governance in agriculture-based value chains. Agri-businesses value chains are the subject of great interest among government and development partner institutions as a pathway for the economic growth of developing countries, as it not only contributes to rural livelihoods but also poverty alleviation if practiced in a sustainable manner (Mugabira & Ssekiboobo, 2011; Locke & Byrne, 2008; UNIDO, 2009). On the other hand, a World Bank Report (2010) contended that investments in agriculture have a quadruple impact on the economy compared to other sectors.

As more research is carried out on individual agri-business sectors, there is growing awareness that the governance structures that dominate agri-business value chains may be highly inequitable, the best-known examples being coffee producing countries such as Burundi, Ethiopia, Rwanda, Uganda, El Salvador, Guatemala, Honduras, Colombia and Brazil (Fitter & Kaplinsky, 2001a) and the Ugandan fish value chain (Mugabira & Sekiboobo, 2011; Mugabira & Chivaka, 2015). Upstream actors are undoubtedly the most maligned actors in the liberalised agri-business value chains in developing countries (Laven, 2005), yet some studies argue that upstream actors are mainly small-scale farmers - certainly private sector operators or small-to-medium enterprises - and are already entrepreneurs in the sense that they seek out profitable opportunity, manage costs of production and marketing, and aspire to grow their businesses (Kahan, 2013; Hrangao & Sorokhaibam, 2015). The extent and effectiveness by which these rural entrepreneurs can ‘upgrade’ to become competitive requires a GVC analysis of three governance related factors: first, appropriation of economic rents and distribution of gains;

second, diffusion of production capabilities; and third, market access and standards (Frederick & Gereffi, 2009). Results from the analysis provided insights into policy interventions through investment incentives to enable shifts in governance structures to facilitate upgrading and chain competitiveness. The next section discusses complimentary theoretical frameworks to the GVCA approach.

2.4 Complimentary theoretical frameworks

A number of other theoretical frameworks could be considered variants of the GVCA approach, which can be thought of as extensions or complementary. This sub-section introduces the other four main complementary theoretical approaches:, the New Institutional Theory (NIT), Transactional Cost Analytical (TCA) framework ,the Cluster Approach and Entrepreneurship Behavioral Theory.

2.4.1 New institutional theory

The New Institutional Theory/Economics (NIT or NIE) approach offers important analytical tools for complementing the GVCA approach. Historically, the Resource Based View (RBV) of the firm theory by Barney (1990), has been one of the key theories in entrepreneurship because access to resources is central to the success of a new venture (Bhide, 2000). Although this study recognises the importance of the RBV, this theory was not applied in the analysis because it is more suitable for large organisations (Mathur, 1999; Akio, 2005), rather than entrepreneurs or chain actors involved in running small and medium-sized enterprises (SMEs) participating in value chains, who are the main focus of this study. For this reason, the choice of entrepreneurial behavioural theory to highlight entrepreneurs' behavioural characteristics and management practices that transform into entrepreneurs' resources and capabilities is more

appropriate. While studying entrepreneurs' behaviour is generating a lot of enthusiasm in the discipline of global value chains and competitiveness, it has become clear that the rules governing the game, the governance structures enforcing the rules, as well as the economic incentives, can all impact an industry and in turn its entrepreneurial success or failure (Baumol, 1990; North, 1992).

Williamson (1998) asserted that the NIT addresses two parts. Part one deals with the institutional environment – the rules of the game – and traces its origin to Ronald Coase's 1960 paper on 'The Problem of Social Cost'. Part two deals with institutions of governance – the play of the game – and originates from Coase's 1937 paper on 'The Nature of the Firm'. NIT is considered to have emerged as an inter-disciplinary school of thought that combines economics, law, organisational theory, political science, sociology and anthropology to understand the development of institutions (Williamson, 1998; Olomola, 2010). The aim of NIT is to explain the nature of institutions, how they emerge, what purposes they serve, how they evolve over time, and how, if at all, they could be reformed (Martin, 1993). NIT is thus concerned with addressing market imperfections and failures that result from actors'/entrepreneurs' behaviours, manifesting in the form of productive or unproductive, and/or at times predatory, actions (Baumol, 1990). This study applied the NIT to investigate the prevailing institutional quality in Uganda, i.e. the prevailing rules of the game and the governance institutions that account for wealth distribution and competitiveness in value chains. The rules of the game were investigated in the form of monopoly and/or anti-monopoly policies, while governance institutions were investigated by looking at governance power distribution and fairness in the enforcement of the rules of the game, and by highlighting

possible reforms for the competitiveness of value chains. The next section discusses the transactional cost theory, which is also part of the NIT.

2.4.2 Transactional cost analytical theoretical framework

The GVCA approach is considered to be an extension of the TCA approach because it explains network intermediary governance market structures, i.e. modular, relational and captive, that lie between two extreme governance typologies: simple market linkages and hierarchies. The binary view of the extreme governance typologies depicting either markets or hierarchies is best explained by the TCA approach.

The TCA by Williamson, (1975), or transaction cost economics (TCE) by Williamson, (1979), which are derived from Coase's (1937) economic theorem, explain how global production might be organised. The organisation and co-ordination can either be arm's-length market relationships, or within transnational firms, 'vertical integration' or hierarchies. The assumptions determining the choice of governance structure are:

(1) Asset specificity – refers to the level to which specific investments inputs are required for a particular transaction (Williamson, 1975). Asset specificity takes a variety of forms such as human assets, physical assets, site specificity, dedicated assets, brand name capital and temporal specificity.

(2) Coordination and/or transaction costs – costs related to the management and mitigation of risks due to uncertainties in carrying out the transaction. These costs can include search costs, contracting costs, monitoring costs, and enforcement costs (Williamson, 1985; North, 1990). The purpose of the TCE is cost minimisation (Williamson, 1975).

(3) Frequency/Scale of economies - refers to volume/number of transactions per period.

(4) Opportunism – refers to the guile and self-interest exhibited by individuals and/or actors operating in a world subjected to bounded rationality and/or limited judgment (Williamson, 1990).

The four characteristics described above have a major influence on the efficiency of alternative coordination structure - either buy or make decisions. The decision to buy arm's-length market relationships arise for standard products and services requiring low asset specificity and having many suppliers and buyers. On the other hand, the decision to make through 'vertical integration or hierarchies' arises for complex products or services requiring high asset specificity through specific transaction investments. This raises the risk of opportunism and uncertainty, which either rules out outsourcing altogether, or makes it costlier because safeguards have to be in place, thus increasing transaction costs (Williamson, 1998; Gereffi et al., 2005).

Scholars have identified drawbacks in the TCA approach, such as methodological measurements and that the TCA approach views a firm as an independent entity structured either as purely market arm's-length relationship or hierarchy vertically integrated with a purpose of earning rents through cost minimization (Hill, 1990; Shelanski & Klein, 1995; Hobbs, 1996; Wang, 2003; Macher & Richman, 2008). However, the GVCA approach fills this gap by arguing that inter-firm relationships are a blend between a market and hierarchies (Gereffi et al., 2005). Further, Gereffi et al. argue that even without opportunism, transaction costs increase when inter-firm relationships require greater coordination. They cited two examples, one of which involved complex product specifications and designs which require closer coordination and complex information transfer across enterprise boundaries. The second example related to products whose

supply is time-sensitive, as separate processes need to be better coordinated in order to synchronise the flow of inputs through the chain.

TCA views a firm as a bundle of transactions or contracts, negating the notion of firm capabilities and knowledge (Madhok, 1996). The literature on firm capabilities and knowledge, which has its roots in the resource-based view theory of the firm pioneered by Penrose (1959), provides insights on why firms may construct inter-firm relationships. According to Penrose, companies possess core competencies (i.e. resources) that are not easily replicated by competitors, regardless of frequency or scale of economies. This suggests that even the most integrated firm rarely possesses all the knowledge and capabilities required to bring a product or service to market. This implies that firms need each other (dependency) for the acquisition of some key inputs. Other resource-based view researchers have found out that firms that rely on the complementary capabilities of other firms achieve superior performance (Madhok, 1996; Dyer, 1997), while Prahalad and Hamel (1990) observed that they perform better than vertically integrated firms.

In conclusion, TCA fails to explain the complex structuring of inter-firm relationships due to its inability to recognise that relationships are formed for the mutual benefit of the participating partners and not isolated firms. Further, the growing body of work on the governance of global value chains suggests that the coordination and control of complex global scale production can be achieved without direct ownership, contrary to TCA predictions for hierarchies (vertical integration).

2.4.3 Cluster theoretical framework

The industrial cluster approach is considered to be another variant of the GVC approach. In contrast to the GVC literature, the cluster literature views inter-firm co-operation within a single geographical locality rather than within the chain as the source of competitive advantage (Humphrey & Schimtz, 2000). The allure of the cluster approach is its particular significance to boost SMEs' cooperation for competitiveness alongside large firms, both in developed and developing countries (Giuliani, Pietrobelli & Rabellotti, 2005). Schmitz (1997, pp. 4) defined a cluster as "*a group of small producers making the same or similar things in close vicinity to each other*". Clustering helps small firms overcome constraints such as a lack of specialised skills and difficulty of access to technology, inputs, market information, credit and external services (Giuliani et al., 2005; Pietrobelli & Rabellotti, 2006). The firms are said to benefit from collective efficiency defined as the *'competitive advantage derived from local external economies and joint actions'"* (Schmitz & Navdi, 1999, pp. 1504).

Examples of successful clusters include Sinus Valley footwear in Brazil (Schmitz, 1999), the surgical instrument district in Germany and Pakistan (Navdi & Halder, 2005), the horticulture cluster in Spain (Aznar-Sanchez & Galdeano-Gomez, 2011), the horticulture cluster in Mexico (Maya-Ambia, 2011), the horticulture cluster in Kenya (Dolan & Humphrey, 2000) and the Detroit vehicle development cluster in the USA (Sturgeon et al., 2008).

The origin of clusters was traced by Marshall in his book, *Principles of Economics* (1920), when he discussed specialised industrial locations (Marshal, 1890).Marshall recognised that the economic productivity of firms and businesses resulted from the location and proximity of economic agents to each other. This implies that the cluster definition provided by Schmitz

(1997), as cited above is a feature of Marshallian clusters. Porter (1990) is credited for having popularised the cluster concept through his Diamond of Advantage Framework, however this has been criticised as being a generic and vague way of thinking about regional economic development (Hofe & Chen, 2006). A similar critique by Martin and Sunley (2003) pointed out that Porter has been successful because he promotes competitiveness; a concept which appeals to politicians and policy makers, but has little contribution to academic rigour. In particular, they claimed that Porter's Diamond Model in Industry Cluster Analysis gives insight into the innovative nature of competition rather than adding insights to the different aspects of cost minimisation, which is the traditional comparative advantage for cluster identification (Martin & Sunley, 2003). This makes Porter's model insignificant in theoretical cluster identification.

The cluster approach has been found to have some drawbacks. First, cluster studies fail to group industries according to inter-industry interdependencies, i.e. inter-industry trading patterns (Hofe & Chen, 2006). Second, the identification of clusters based on strength of linkages and 'spillovers' poses measurement problems because the cut-off between 'strong' and 'weak' ties is unspecified (Martin & Sunley, 2003). The third critique, which is most relevant to this study, is that the cluster theory focuses exclusively on intra cluster vertical and horizontal localised relationships, while conceptualising external linkages simplistically as either contained within multi-locational firms or made through arms-length trading relationships (Humphrey & Schmitz, 2002). However, in reality, clusters are not limited to local spheres; clusters are closely linked with external actors who connect such clusters to global markets (Schmitz & Navdi, 1999). Sturgeon et al. (2008) contended that the best performing clusters are those that are well connected to external linkages that provide novel information and technical support not available

locally. To this end, the GVC approach (Gereffi, 1999) takes into account activities occurring outside the cluster, thus illuminating the crucial strategic role played by external actors.

As domestic clusters are being inserted into GVCs, efforts are being made to combine the cluster and GVC approaches. Recently, input-output based industrial cluster analysis involving forward and backward linkages in the value chain has gained popularity (Bergman & Feser, 1999; Doeringer & Terkla, 1995; Hill & Brennan, 2000; Meyer-Stemer, Maggi & Seibel, 2004; Navdi & Halder, 2005). Feser and Lugar (2002, pp. 3) defined a cluster as

> "*concentrations of businesses that co-locate because of trading (buyer-supplier) relationships and/or to share common factor markets (including infrastructure, knowledge resources, and labor) and/or common goods markets*".

This definition is a reflection of direct value chain linkages and complementary horizontal relationships, thus integrating the cluster and GVC approaches.

In sum, both the cluster and GVC approach offer interesting opportunities for local firm upgrading and are not mutually exclusive (Pietrobelli & Rabellotti, 2006). Thus what this study leveraged upon in the review of the industrial cluster approach is its contribution to examining local linkages between the main actors and the support offered by private companies, development partners and public institutions. Clearly all approaches illustrate the organisational and spatial structure and dynamics of global industries, as well as the strategies and behaviours of major buyers and suppliers including power relations (Sturgeon, 2008). Throughout this thesis the term 'GVC' is used consistently, whilst recognising the usefulness

of other variants, for example those provided by the TCA and cluster approaches. The next section discusses the entrepreneurship theoretical frameworks.

2.4.4 The domain of entrepreneurship theoretical frameworks

There are three dominant perspectives in the field of entrepreneurship:

The first perspective is the functional approach which regards the economic function of the entrepreneur. This perspective views an entrepreneur as an innovator and innovation as the heart or the central characteristic of entrepreneurial effort (Schumpeter, 1934).

Schumpeter described these innovations as "carrying out new combinations" that take various forms besides mere improvement in technology: (1) the introduction of new goods, (2) the introduction of new methods of production, (3) the opening of new markets, (4) the opening of new sources of raw material supply, and (5) the carrying out of new forms of industrial organisations, like the creation of a monopoly or the breaking of a monopoly through creative destruction.

According to Schumpeter (1943), the above five entrepreneurial behavioural practices are sources of competition and not forces of supply and demand. Therefore, Schumpeter's approach is in essence that entrepreneurs are competitive and always strive to gain an edge over their competitors (Gray, 2002). The drawback of this approach is its inability to recognise the role of the policy environment in moderating the behaviour of entrepreneurs while undertaking any of the above innovative five tasks. As change agents entrepreneurs exhibit behaviours that may be beneficial or detrimental to society in their pursuit of gains (North,

1990). The behaviours exhibited can be described as productive or unproductive, and at times predatory (Baumol, 1990).

The second perspective is the trait approach which focuses on the identification of personal characteristics such as need for achievement, internal locus of control, high risk-taking propensity, and tolerance for ambiguity, drive and energy (McClelland, 1961; Rotter, 1966; MacMillan, 1965; Timmons, Smollen & Dingee, 1977; Brockhaus, 1980). The trait approach has received much criticism because of its focus on trying to profile an entrepreneur (what he is and not what he does). This fails to provide empirical evidence for identifying a finite number of traits of entrepreneurs that distinguish between successful and unsuccessful entrepreneurs.

The third perspective is the behavioural approach, which focuses on the behaviours of an entrepreneur including the process, function and activities in venture creation. The behavioural approach has made great progress because it focuses on the entrepreneurs' behaviour (i.e. what they do instead of what they are) and on circumstances or situational factors that moderate the effects of entrepreneurs' behaviour and performance (Gatner, 1989; Baumol, 1990). This study adopted the behavioural approach to examine entrepreneurs' traits, characteristics and functional activities, which are basically behaviours that can be learnt, nurtured, and developed into a business culture, competencies and capabilities for enterprise growth, productivity and ultimately for an entire value chain's competitiveness. In addition, entreprenuership bricolage; an emerging behavioral approach that examines business success amidst resource constraints (Baker & Nelson, 2003), informed analysis of entrepreneurs performances in this study. The

next section discusses linkages between entrepreneurial behavioral practices in determining the competitiveness of the agri-value chains.

2.4.4.1 Entrepreneurs' behavioural practices and entrepreneurship in agri-value chains

Entrepreneurs are change agents (North, 1990), and as such they exhibit behaviours that may be beneficial or detrimental to society in their pursuit of gains. The behaviours exhibited can be described as productive, i.e. geared towards innovation (Schumpeter, 1934), or unproductive and at times predatory (Baumol, 1990). This study will make an effort to analyse and understand the behaviour of entrepreneurs in the context of the GVC literature.

In the study of GVCs, entrepreneurs are the chain actors operating at different nodes of the chain. They are perceived as people who have an 'eagle's eye' that enables them to spot an opportunity in the marketplace or along the value chain, and are able to mobilise resources to pursue the opportunity. The activities and processes surrounding opportunity seeking are known as entrepreneurial activities and entrepreneurship respectively (GEM, 2008; Ahmad & Hoffmann, 2008; Koellinger, 2008).

Cantillon (1755) is considered to be the original author on entrepreneurship. He qualified the concept of entrepreneurship as someone bearing the financial risk of a business venture. The concept received much attention during the 1930s by the works of the economist Joseph Schumpeter, who stated that people who had the interest and skills to convert ideas or inventions into successful innovations caused creative destruction in markets (Schumpeter, 1934). This is considered 'Schumpeterian entrepreneurship', which disturbs an existing equilibrium in the market. In the 1970s, Israel Kirzner objected to the Schumpeterian model by

proposing that entrepreneurship moves an economy towards equilibrium (Kirzner, 1973). This is described as 'Kirznerian entrepreneurship'. From both schools of thought it can be deduced that entrepreneurship is about individuals and/or firms, be they new, old, large or small, which actively contribute to continuous renewal and change in the economy (Henrekson, 2007). According to GEM Studies (2008; 2009; 2010), entrepreneurship is no longer limited to innovations and inventions per say; it is now generally acknowledged that entrepreneurship is about starting a business.

Agricultural value chains, especially in developing countries, are characterised by many complex and multi-tiered chain actors (input suppliers, primary producers (farmers), transporters, intermediaries, traders, processors, wholesalers, exporters and service providers (credit financing and consultants) and non-chain actors like public agencies and NGOs. The bulk of the chain actors are mainly smallholder farmers. The encouragement of these small-scale growers (entrepreneur farmers) in developing countries to flourish in the agricultural and forestry sectors, which are characterised by seasonality, uncertainty, price fluctuations and information asymmetry, poses a challenge in maintaining an economically viable, secure and reliable supply (Mpandeli & Maponya, 2014; Umar, 2016).

To overcome these challenges, the chain actors have to work together to increase their productivity and raise the value of end products. By undertaking a value chain analysis, the actors can identify opportunities that offer increased efficiency, economies of scale, reduction of transaction costs or value added in the chain (Azouzi, LeBel & D'Amours, 2012). Entrepreneurs and businesses with an entrepreneurial focus are often the first to identify these opportunities and act on them. In the GVC literature, it is these entrepreneurs that become the

chain drivers and powerful actors who set governance parameters under which others operate. They influence who acquires production capabilities and market access and how gains are distributed throughout the chain (Gereffi et al., 2005).

By setting governance parameters they determine admission and/or exclusion of chain participants. The scope of their actions (behaviour) may have an impact not only on the industry level but also on the national and global markets.

> "*For instance, if the global value chains are governed by a few lead firms or entrepreneurs, market access for suppliers is dependent not only on the efficiency of the supply capabilities, but also on how suppliers fit into the strategies of the lead firms*" (Velde et al. 2005, pp. 4).

Further, the lead firms and/or entrepreneurs governing a chain are able to determine where high return activities (such as marketing and R&D) and low-return activities are located along the chain (Velde et al., 2005; Gereffi et al., 2005; Frederick & Gereffi, 2009). The location of value adding activities affects the distribution of gains among chain participants, contributing to winners and losers. In entrepreneurship literature, entrepreneurs exhibiting such behaviours are classified as either productive or non-productive, and at times evasive or predatory in nature (Baumol, 1990; Dejardin, 2000; Mehlum et al., 2003; Douhan & Henrekson, 2007).

Unproductive entrepreneurs are driven by higher seeking rents through entrepreneurial activities that are costly to the general welfare of the society (Henrekson, 2007; Dejardin, 2000). Dejardin (2000) cited rent seeking forms such as corruption, stealing, bribery and protection seeking with the purpose of limiting economic competition. Henrekson (2007)

offered a different perspective of rent seeking entrepreneurs, contending that they set up a business to exploit subsidies and tax breaks rather than value creation. This implies that they engage in unproductive activities that promote the inefficient use of resources.

On the other hand, productive entrepreneurs create a kind of business-oriented entrepreneurship driven by opportunities to earn economic rents, emanating from innovations in the production system (Douhan & Henrekson, 2008). Foss and Foss (2006) emphasised that productive entrepreneurship is about value creation. This kind of entrepreneurship aims at achieving economies of scale for higher rents through efficiency, with rent being defined as the rate of return exceeding the risk-adjusted market rate of return or return in excess of a resource owner's opportunity cost (Tollison, 1982).

While productive entrepreneurship literature recognises the appropriation of economic rents emanating from value addition by entrepreneurs, it falls short of recognising the aspect of distribution implications along the value chain. This study contends that even though entrepreneurs can operate an efficient and effective value chain 'competitively', the issue of distribution of gains has an effect on sustaining the competitiveness of the value chain. This is a gap which this study intends to help fill in the arena of entrepreneurship in agricultural value chains.

The above discussion reveals that chain actors' actions can stimulate or hinder the competitiveness and/or competitive performance of the value chain. This stimulation or hindrance is not only industry-specific (meso-level), but also translates into a nation's (macro-level) prosperity or failure to prosper in the global economy. The next section discusses the major themes of this study by examining entrepreneurial management processes and

entrepreneurial competitive potential factors determine competitive performance of the enterprises undertaking GVC participation.

2.5 Themes on competitive performance, management processes and competitive potential factors.

2.5.1 Competitive performance of agri-business value chains

There is a dearth of empirical studies on the competitiveness of agri-business value chains in developing countries, especially in Sub-Saharan Africa. Some available studies are from Asia (Sagheer, Yadav & Deshmukh, 2009), Europe (Henchion & McIntyre, 2005; Bilalis, Alvizos, Tsironis & Wassenhove, 2007) and Latin America (Zylbersztajn, Cláudio & Filho, 2003). In developing countries like Uganda, the majority of players belong to the unorganised informal entrepreneurial sector, which renders access to first-hand information cumbersome (Sagheer et al., 2009). This may be a contributing factor to the scarcity of empirical studies, which is why this study offers an invaluable contribution.

Buckley et al. (1988) asserted that competitive performance examines competitiveness as the ability to perform well, while the competitive performance of value chains can be assessed in terms of the competitive success or failure of the value chain. In this study, competitiveness success or failure was analysed using productivity increases and/or decreases at the enterprise level in value chains. The benchmarking indicators were based at productivity industry norms within the country and against comparative benchmarks with other countries. The FAO Stat data (2013) was a useful source of information for providing country comparative productivity data by ranking in terms of yields per unit area. Other productivity measures such as time to market and quality were obtained from specialised industry reports. This study adopted these productivity measures in order to measure the competitiveness success or failure of Uganda's

agri-business value chains. The research found these measures to be of profound importance because they are generally considered to be global competitiveness indicators for assessing the economic strength of entities such as firms, industries/sectors, regions and nations.

The next section examines the relationship of the independent variables, i.e. entrepreneurial management processes' critical success factors and entrepreneurial competitive potential factors, in explaining competitive performance.

2.5.2 Entrepreneurs' perceptions of management processes' critical success factors

An entrepreneur in the behavioural approach is perceived into two perspectives the first perspective an entrepreneur as a person who exhibits managerial behavioural characteristics and/or traits that lead to competitive success (Gartner, 1989; McClelland, 1961; Rotter, 1966; Brockhaus, 1980); and the second perspective perceives an entrepreneur behavior basing on situational factors that moderate the effects of entrepreneur's behavior and performance (Gartner, 1989; Baumol, 1990). The first description of the entrepreneur in the behavioural approach corresponds with the way an entrepreneur manages decisions and processes for business success, while the second approach examines the effect of the external environmental factors or competitive potential factors in moderating entrepreneurs' behaviour.

Buckley et al. (1988) asserted that management processes entail examining competitiveness as the process of managing decisions and processes in the 'right way'. The person at the centre of managing decisions and processes in the 'right way' or 'wrong way' is the entrepreneur and/or his/her manager. This implies that the role of the entrepreneur in managing decisions and processes the 'right way' or 'wrong way' is what distinguishes successful from unsuccessful firms, investment projects and entrepreneurs. Rockart (1979) is credited for having identified

areas or activities in a business that must be managed right, which he termed critical success factors (CSFs), after which a number of studies emerged that investigated critical success factors (Munro, 1983; Chung, 1987; Lumpkin & Ireland, 1988; Attahir, 1995; Bessant & Kaplinsky, 1995; Barnes, 2000; Hackney & Dunn, 2000McCormick & Schmitz, 2001; Kaplinsky, Memodovic, Morris & Readman, 2003; Schmitz, 2005; Ewasechko 2005; Quesada & Gazo, 2007; Sebora, Lee, & Sukasame, 2009; Naqvi, 2011; Navas-Aleman 2011; Chong, 2012; Ab Talib & Hamid, 2014; Kumar, Shankar & Singh, 2015). A study by the Australian Government's Rural Industries Research & Development Corporation (RIRDC), conducted in (2009), revealed a growing interest by public institutions to apply CSFs to their project development models.

Critical success factors represent those activities and areas that require constant and careful attention (Rockart, 1979) in order to achieve desired performance (Hackney & Dunn, 2000), which entail more management participation (Munro, 1983; Quesda & Gazo, 2007) to reduce business start-up failures and increase business survival or success (Chung, 1987; Lumpkin and Ireland, 1988). The value chain research fraternity has developed a tool for the assessment of perceptions of CSFs by value chain actors for value chain competitiveness (Schmitz, 2005; McCormick and Schmitz, 2001), whereby the suppliers rate their own performance with respect to buyers' expectations and gaps for improvement are identified. This is utilised by the Dominican Republic garment industry (Bessant & Kaplinsky, 1995), the furniture industry in South Africa, Indonesia and Brazil (Kaplinsky *et al*., 2003; Ewasechko, 2005; Navas-Aleman, 2011), and the auto industry in South Africa (Barnes, 2000). These studies applied CSFs such as quality, reliability, price, time from order to delivery, quantity, and innovation, which can be described as 'hardware' measures. In addition to examining the hardware measures, this study

also investigated CSFs according to 'software' measures, described as personal behavioural characteristics or traits such as locus of control, commitment and personal involvement, which have been found to determine competitive success (Rotter, 1966; Gartner, 1989; Sebora et al., 2009).

The next section investigates entrepreneurs' perceptions with regards to availability of competitive potential factors and their efficiency in facilitating competitive success.

2.5.3 Entrepreneurs' perceptions of competitive potential factors

An entrepreneur in the behavioural approach is viewed as a person whose behaviour, actions and activities are moderated by the prevailing environmental factors (Gartner, 1989; Baumol, 1990). These factors are described as competitive potential in the competitiveness analytical framework (Buckley et al., 1988). As suggested by Buckley et al., potential factors should not be considered only as available assets or inputs, but the efficiency to which they are put to use and the results obtained from their use need to be evaluated. This study adopted this approach of examining the entrepreneurs' perceptions with regards to efficiency of the external environmental factors or competitive potential in achieving business competitive success.

The new institutional theory describes the environmental factors as the formal and informal rules of the game (North, 1990; Williamson, 1998), while the GVC framework describes them as chain governance (Gereffi et al., 2005). Buckley et al. (1988) asserted that competitive potential sees competiveness as comprising the generation and maintenance of competitive advantage. The existing competitive potential factors can create conditions that favour either productive entrepreneurship behaviours or unproductive and at times predatory entrepreneurship behaviours (Baumol, 1990). This study examined the following existing

competitive potential factors that are also regarded as chain governance factors: (1) equitable value chain sharing, (2) entrepreneurial alertness and regulatory environment, (3) compliance with standards for market access, and (4) collaboration for the diffusion of supplier production capabilities.

2.5.3.1 Equitable value chain sharing

The identification of winners and losers in Uganda's agricultural GVC participation was one of the core objectives of this study. The appropriation of economic rents as a motivating factor for business start-ups can be traced to as early as the 18th century in relation to land owners and capitalist farmers (paid land rent to landlords for food production).

Ricardo (1815) is credited for having propagated the theory on land rent by realising the existence of entry barriers (scarcity of resources) and protective barriers to importations (Corn Laws), which significantly altered the previous analyses on society and economy. Ricardo (1815) is also credited for having introduced the term 'economic rent' to describe payment for the uses of the original and indestructible powers of the soil. Schumpeter (1934) caused a revolution in Economic Rent Theory by introducing the concept of entrepreneurial rents; he regarded entrepreneurs as the engine of economic growth as they disturb the equilibrium. The process of disturbing the equilibrium, which he termed "creative destruction", meant a process of introducing new combinations, thus destroying the existing combinations. He identified five types of 'new combinations': creating new products or new quality; new methods of production or new technology; opening up new markets; creating new sources of supply; and creating new organisations or structures in industry – such as the creation of a monopoly position or breaking up a monopoly position.

An entrepreneur is able to attract premium prices from these new combinations, providing greater returns to meet the cost of innovation. The super profits act as a stimulant, thus inviting imitators, which results in competition and a fall in prices and hence a new cycle of innovation - either by the same entrepreneur or another entrepreneur in search of new rents. In today's competitive environment, firms or entrepreneurs can appropriate economic rents through many value addition activities by creating barriers to entry or by taking advantage of existing entry barriers (Kaplinsky, 1998). One type of rent can be classified as *static*, based on the bounty of nature, access rights and commodity price markets known as Ricardian rents, while the second type of rent is created by dynamism or innovation, through purposive actions and is also eroded by forces of competition thus known as Schumpeterian rents. Still, appropriation of economic rents is not only limited to a single firm; within the GVC literature it is a reflection of how income is shared among the actors along the value chain.

Income distribution from GVC participation can be analysed in different dimensions: different links in the chain, different countries (producing and consuming), different classes (employers and employees), different types of producers (large and small farms and firms), different regions, different genders and different ethnic groups (Fitter & Kaplinsky, 2001a). Of these, Fitter and Kaplinsky applied the dimensions of different links and countries in the chain by analysing the spread of gains in the coffee value chains of Burundi, Ethiopia, Rwanda, Uganda, El Salvador, Guatemala, Honduras, Colombia and Brazil. The findings revealed that the share of final sales value accrued to different links: 10% at farm level; 21% at ex-farm processing; 8% at export agents; 2% at insurance/freight level; 8% at global buyer level; 29% at roaster level and 22% at retailer level. With respect to the distribution of gains between different countries, the data revealed that between the late 1980s and late 1990s most of the gains

(almost 80%) were appropriated by chain participants resided in the high consuming countries. Such a scenario depicts a picture of winners and losers in GVC participation. In the citrus value chain, farmers received approximately 10% of the final price (Lee, Gereffi and Barrientos 2011). In the case of the grapes export value chain to United Kingdom, supermarkets earned 42%, distributors earned 32% and growers received only 18% or (26% if pack houses included) based on the final price (Barrientos and Visser, 2012).

Tijaja's (2010) analysis of distributional implications into Thailand's cassava VCs was done at both the firm level and at the macro level. Her findings revealed that weaker GVC participants, such as smallholder farmers and unskilled workers, were more vulnerable to market shocks and uncertainties. Strikingly, her study revealed that the trade in less value-added cassava VCs between South-South countries (Thailand and China) was less stringent and resulted in higher revenues, compared with trade involving a greater degree of value-addition between South-North countries (Thailand – EU). A similar study by Terheggen (2010) on the Gabon forestry VCs between Gabon and China and Gabon and the EU arrived at the same finding.

These findings confirm the appropriation of rents by the exporting countries based on factor utilization i.e, Ricardian rents, however neither study shows the revenue generated by Chinese retailers and/or supermarket companies in China. This highlights a gap in both Tijaja's and Terheggen's studies, since empirical evidence is lacking to challenge the GVC literature which argues that consumer countries (the 'North') appropriate a high percentage of rents through the location of low value addition activities to the 'South', preserving high yielding value addition activities in their home countries. This implies that the revenue generated by producer export companies is a reflection of the better commodity prices offered by China in comparison to the

EU. The analysis falls short of revealing whether there is a fair distribution of gains between producer export (engaging in extractive activities) and import countries (undertaking value addition activities).

Value-addition activities are shielded from competitive pressure due to the creation of high entry barriers (Kaplinsky, 1998; Kaplinsky & Morris, 2000). This enables entrepreneurs engaging in value-addition activities to experience an appropriation of sustained income i.e earning Schumpeterian rents. Despite this omission, both studies i.e., Tijaja's and Terheggen's agreed that the failure of exporting countries to engage in value-addition activities will have dire consequences for the acquisition of specialised skills and technology in these sectors. The inadequacy of skills and production capabilities in these sectors will mean that these countries experience competitive pressure by operating on the extractive level of the GVC, which is associated with low entry barriers in the global economy.

2.5.3.2 Entrepreneurial alertness and regulatory regimes

Entrepreneurship promotion and the existence of an effective and efficient business investment climate and regulatory regime are high on most government policy agendas. Oya (2012), Leavy & Poulton (2007) observed that governments, especially in Africa, are now promoting a dual agricultural policy strategy based on: (a) a strong component of promotion of commercial smallholder production and their integration into global value chains through contract farming (CF) and other similar mechanisms; and (b) some measures to promote agricultural investments by large-scale investors (foreign or national) in an attempt to build up agricultural competitiveness in highly demanding markets.

What is clear from the above stated policy agenda is the need for the collective organisation and coordination of producers or farmers. The cluster approach is best suited to explain the collective organisation of producers to gain from collective efficiency and joint action. Schmitz (1997, pp. 4) defined a cluster as *"a group of small producers making the same or similar things in close vicinity to each other".* Clustering helps small firms to overcome constraints such as a lack of specialised skills and difficulty of access to technology, inputs, market information, credit and external services (Giuliani et al., 2005; Pietrobelli & Rabellotti, 2006). "*The firms are said to benefit from collective efficiency defined as the, 'competitive advantage derived from local external economies and joint actions'"* (Schmitz & Navdi, 1999, pp. 1504).

Agriculture-based clusters' successes are linked to the comparative advantages of a geographical area (Aznar-Sanchez & Galdeano-Gomez, 2011). In considering the geographical area, a number of external economies are of particular significance for clusters' attractiveness and formation (Schmitz, 1995; Rabellotti, 1997). These include clients' access to the cluster, free flow of information and innovation, factor production endowment (e.g. favourable climate, soils, and temperatures), market access, infrastructure (Aznar-Sanchez & Galdeano-Gomez, 2011; Pietrobelli & Rabellotti, 2006), grant incentives and input support provision. Entrepreneurs who perceive the availability of these opportunities in clusters tend to pursue these business opportunities and are said to exhibit entrepreneurial or opportunity alertness.

2.5.3.2.1 Entrepreneurial alertness

Entrepreneurship alertness is of high interest in academia and policy by explaining business start-ups, growth and job creation in a country's economy. The Global Entrepreneurship

Monitor (GEM) dedicates effort to undertaking global comparative ranking surveys of countries with respect to entrepreneurship activities. According to the GEM Report of 2014, Uganda (28.1%) was the most entrepreneurial country in the world, followed by Thailand (16.7%) and Brazil (13.8%). Interestingly the USA was found to be lagging far behind with a score of 4.3%, as this country often comes to mind as being the most entrepreneurial in the world. The GEM Report also rated Uganda's entrepreneurs as top in the world for perceived opportunities (76.9%), perceived capabilities (84.9%) and fear of failure (12.6%). This finding suggests that Uganda's entrepreneurs are alert to finding business opportunities in their environment, and they also believe that they have the skills to exploit available opportunities coupled with a low fear of failure. This finding was of interest to this study with respect to pursuing investment opportunities in Uganda's agri-business value chains.

The GVC framework (Gereffi et al., 2005) assists in mapping a value chain to identify available incentives, investment opportunities and constraints, while entrepreneurial alertness enables entrepreneurs to perceive and exploit available investment opportunities (Kirzner, 1979; 1981; 1997; Bygrave, 1993; Shane & Venkataraman, 2000) in the value chain. When the entrepreneurs pursue these opportunities they are able to redress their earning potential and reduce exploitation, especially through upgrading. Kaplinsky and Morris (2000) and UNIDO (2009) identified the following four upgrading trajectories in value chains:

- Process upgrading: improving the efficiency of internal processes to enhance economies of scale (productivity) more significantly than rivals'. This may take place within intra-firm chain links and between inter-firm chain links.

- Product upgrading: introducing new products or improving old products faster than rivals.
- Functional upgrading: deepening value added activities which takes place vertically along the chain, especially undertaking activities such as design that attracts high rents.
- Chain upgrading: transiting to an entirely new value chain. Kaplinsky and Morris (2000) cited an example of Taiwanese firms that moved from the manufacture of transistor radios to calculators, TVs, computer monitors, laptops and now WAP phones.

Investments in any of the above upgrading activities determine the shaping and re-shaping of the existing governance structures, resulting in higher earnings and the competitive success of the enterprises and the entire value chain. However, the existence of a favourable investment climate and regulatory regime that sets the rules of the game is a precursor for the undertaking of successful entrepreneurial upgrading activities.

2.5.3.2.2 Regulatory regime and/or institutional quality

"If institutions are the rules of the game, organizations are the players" (North, 1992, pp. 10).

Since 1999, the aim of the GEM surveys has been to offer insights into great leaps or slowdowns in economic growth - with the central actor being the entrepreneur. The pretext of the GEM surveys is that countries with high levels of entrepreneurial activities are likely to experience high levels of economic growth and job creation, while countries with low levels of entrepreneurial activities are likely to experience slowdowns in economic growth and job creation. What the GEM studies suggest is that at any given place and time, the supply of entrepreneurs in the economy is crucial.

This study recognises the central role of the entrepreneur as the engine of economic growth, but also agrees with Baumol's paper (1990) which contended that without quality institutions, entrepreneurs' activities can be detrimental to society's growth and well-being. In a nutshell, Baumol emphasised that it is the prevailing institutional quality - the rules of the game determining the reward structure in the economy - which influences the allocation of entrepreneurial talent between productive activities such as innovation and largely unproductive activities such as rent-seeking.

Studies show that institutional quality strongly influences wealth distribution (de Soto, 2000; Alonso & Garcimartin, 2013), competitiveness and growth (Easterly & Levine, 1997; Acemoglu et al., 2001; 2002; Rodrik, Subramanian and Trebbi , 2002; Sala-i-Martin & Subramanian, 2008). A recent study in South Africa concurred with these studies and emphasised that sound institutional arrangements and good governance influences good performance (Chibanda, Ortmann & Lyne, 2009). As a result, institutional quality is now receiving much global attention, as witnessed by the World Economic Forum's Global Competitiveness Reports which since 2005 have put it as the number 1 pillar among the 12 pillars of the Global Competitiveness Index (GCI) measures. According to the WEF (2010), revealed that a sound institutional environment became apparent during the most recent economic crisis and corporate scandals. Therefore, governments have been found to have a role to play.

Governments can provide protection as an incentive regime to particular domestic sectors or clusters in the form of tariffs on imports or not allowing imports altogether. This form of protection was found to enable cluster growth and employment creation as it shields the cluster from competitive pressures, thus facilitating the earning of Schumpeterian rents. Rabellotti

(1999) conducted a study on the Mexican shoe industry cluster using in-depth interviews with key informants together with a quantitative survey covering 63 shoe manufacturing companies. He discovered that the Mexican shoe industry had contracted due to liberal reforms enacted in 1985, but was able to recover after tariffs were re-imposed in 1993 on China and in 1995 on the rest of the world. Although he identified the devaluation of the peso as a possible other factor because it makes imports expensive, the tariffs provided an incentive regime for the cluster's survival. He also noted, however, that liberalisation introduced competition, which enabled local firms to cooperate and improve their capabilities in order to stave off competition in both the domestic and export markets (Rabellotti, 1999). Other studies on regulatory regimes suggest that governments should discourage environments favouring rent-seeking behaviours such as monopolies unless a sound regulatory regime is in place (Poulton et al., 2008; World Bank, 2013).

The government of Uganda enacted policies that restrict the establishment of competing milling operations within a 25 kilometer radius, especially in the sugar industry (Uganda National Sugar Policy, 2010). This study examined this policy environment with the perspective of assessing entrepreneurs either for productivity gains based on innovative behaviours or rent-seeking entrepreneurial behaviours. The next section examines the importance of compliance with standards for market access in achieving productivity gains and ultimately the competitiveness of the value chains.

2.5.4 Compliance with standards for market access

Humphrey and Schmitz (2001) argued that even though trade liberalisation to dismantle trade barriers was introduced, developing country producers cannot gain market access in developed

countries. This argument is based on the premise that chains which developing country producers feed into are often governed by a limited number of buyers in the developed countries. For example, the coffee industry is governed by five roasters that control around 50% of the roasted and instant coffee market (Gresser & Tickell, 2002). The implication of this analysis is that in order for developing country producers to gain market access to developed countries' buyers, they need to access the lead firms of these chains.

Yet the markets of the North countries have become increasingly complex with regard to food production and consumption in relation to ecological, health, environmental and labour standards (Murdoch & Meile, 1999; Dolan & Humphrey, 2000). These market requirements make global buyers unable to rely on purely market coordination mechanisms i.e., 'arms-length relationships', and therefore the need to control value chains. Control is achieved by setting parameters that determines chain access and is enforceable, whereby suppliers who comply are assured of participation and those who fail to comply are denied market access and are thus marginalised (Humphrey & Schmitz, 2001).

The GVC governance literature prescribes four key parameters that define chain participation, however this study adds a fifth parameter known as price, which was also identified by Humphrey and Schimtz (2001) but has received little attention in GVC studies. Among these parameters, the most prominent ones that drive the value chain are the first two, i.e. product definition and process standards. The key parameters are detailed below:

(1) What is to be produced?

(2) How it is to be produced?

(3) When it is to be produced?

(4) How much should be produced?

(5) What price mark should be offered?

What is to be produced: this refers to product definition. Buyers define what is to be produced in the form of quality standards, which in turn communicate information about product attributes. Information on product attributes is relayed from buyers to upstream producers along the value chain, and product attributes in commodity chains are classified depending on the node of the chain. For instance, of the product attributes at the stage of farm gate and pre/minimal processing, the following are important: appearance, taste, cleanliness, absence of taints, uniformity in shape and size, and species (Ponte & Gibbon, 2005; Kaplinsky, Terheggen & Tijaja, 2010). In the fisheries industry freshness and legal size are important (Mugabira & Ssekiboobo, 2011). After processing and manufacturing, products may retain some of the above attributes in addition to packaging, labeling, and shelf-life. Actors and/or entrepreneurs who are able to meet these attributes contribute to reliability in product quality and hence chain competitiveness.

How it is to be produced: this refers to production and process methods. This is the most critical aspect in standards, because product specifications are achieved as a result of implementing production and process parameters (Ponte & Gibbon, 2005). In agricultural value chains, production standards start with input materials such as quality of seeds and seedlings. This is followed up with good farm management practices for growing and harvesting. Implementation of these standards in developing countries highly depends on the type of market to be served - local, regional or international (Trienekens, 2011). For international markets, producers participating in the value chains have to comply to meet the

prescribed standards, while for local and regional markets; standards are not much of an issue. According to the transactional cost theory, no firm would incur the expense of undertaking a form of vertical integration, 'controlling and monitoring suppliers', to purchase products that the market freely provides. However, for lead firms to meet set standards, they have to develop inter-firm relationships with commodity producers in developing countries.

The set standards are codified and embedded in technical instruments such as the International Standards Organization (ISO) 9000 for quality issues, the ISO 14,000 for environmental issues, and Hazard (HACCP) for food safety and hygiene standards. Further, civic organisations and consumers in developed countries have also put pressure on lead firms to practice ethical trading by introducing other instruments such as fair trade, sustainability and organic certifications (Dolan & Humphrey, 2000; 2004; Ponte & Gibbon, 2005; Tallontire, 2009). The need to meet food safety, environmental and labour standards makes traceability critical in agricultural value chain coordination, thus necessitating tight chain control through closer inter-firm relationships. Since not all actors (especially small farmers) in the chain are able to meet these standards they act as barriers to entry, thus actors are shielded from competition and hence are able to appropriate monopoly rents i.e., Schumpeterian rents.

When and how much to be produced: this refers to the timing and volume of production, which is inter-linked and have to be discussed together. They feed into the law of supply and demand; lead firms define the timing and scheduling of production to match quantities demanded by the markets. Timing and volumes not only have an effect on customer dissatisfaction due to frequent stock outs, but also on price fluctuations. Further, agricultural

commodities are seasonal and highly vulnerable to weather, climate and pest attacks (Mpandeli & Maponya, 2014; Umar, 2016). This poses a challenge of maintaining reliable product flows along the value chain. As predicted by the transaction cost theory, if transactions are arm's-length market-based, inadequacy in supply is an incentive for opportunistic behaviour or 'commodity hoarding' (Williamson, 1990) in order to hike prices. Talbot (1997) illustrated the rise and fall of world prices in the coffee industry due to climatic conditions (frost) in Brazil distorting production volumes.

To overcome such challenges, lead firms have to tightly coordinate agri-business value chains. Gerrefi et al. (2005) cited an example of fresh fruits and vegetables being imported from Kenya by UK supermarkets, which necessitated shifting from arm's-length market coordination to own production by importers coupled with contract farming.

What price mark should be offered: there is a link between price and product grading. In classical economics, price is considered to be a market variable determined by the rule of supply and demand. This is mainly the case for on-spot market transactions, where goods are produced based on 'make to forecast'. However, for other forms of market coordination where goods are produced on 'make-to-order', a target price is always agreed upon by the parties involved in the transaction (Humphrey & Schmitz, 2001). Petkova's (2006) study on fair trade coffee value chains asserted that prices were fixed and as a result growers were remunerated with a considerable net income in comparison to the main stream coffee markets. This meant that fair trade value chains were equitable in comparison with main stream markets, thus contributing to competitiveness.

Price is also a reflection of quality. This is true of commodity or non-commodity markets such as automobiles and electronics. For this reason, the aspect of product grading is important as it addresses the issue of quality for markets that compete more on quality than price. In agri-business value chains pricing based upon product grading is not only a competitive strategy (Fitter & Kaplinsky, 2001b), but also acts as an incentive for producers/farmers to improve farm management practices (Tijaja, 2010). A study by Tijaja (2010) on Thai cassava value chains linked premium prices with starch content. Similar studies linked price with coffee grades (Talbot, 1997; Ponte, 2001; Fitter & Kaplinsky, 2001b).

Wiegratz's (2010) study on agricultural liberalisation in Uganda found that the adulteration of produce compromised quality, because farmers were seeking volume enhancement to increase revenue. He observed the same trend with traders' 'intermediaries', who exhibited the same behaviour of quality adulteration along the value chain. The cause of quality adulteration is linked to the absence of a grading system matched with price in the market. This has an effect on the value chain's competitiveness, which is also reflected at the national level, since the country's commodities may not be competitive in international markets.

2.5.5 Collaboration for diffusion of supplier production capabilities

In the previous section it was revealed that meeting standards was the first major reason why a firm may opt for value chain coordination with suppliers, rather than buying products that the market freely provides. The second reason was risk of supplier failure or lack of production capabilities in the supply base. Risk of supplier failure is attributed mainly to non-price competition-based factors such as consistency in quality, response time and reliability of delivery, together with increasing concerns about safety and standards (Schmitz, 2005).

Brown and Sander (2007) cited an example in Kenya, where of over 200 licensed fresh produce exporters, only 50 (25%) were continuously active. The remainder (75%) were considered to be part-timers who exploited favourable short-term market conditions, i.e. they entered and exited the market sporadically. Such a situation paints a picture of supply failure, impacting upon buyers' reputations in the market.

The TCA theory highlights why a firm may opt to 'buy or make' products (Williamson, 1975). The theory offers two possibilities available for firms - either arms'-length market relationships or vertical integration 'hierarchies'. Given the demand for firms to incorporate competitive strategies such as reliability in quality, consistency in supply (volume), timely deliveries, differentiated products and stable prices (Dolan & Humphrey, 2000), companies cannot rely on spot markets. The alternative offered by TCA theory for the organisation and coordination of production is hierarchies. With the development of the GVC theory (Gereffi et al., 2005), which is considered an extension of the TCA theory, firms facing such a dilemma need not implement hierarchies. The GVC theory offers an alternative organisation and coordination of production through networks or 'quasi-hierarchies' (Humphrey & Schmitz, 2000) e.g. modular, relational and captive value chains. In networks there is cooperation among the firms of more or less equal power that share competencies within the chain, while quasi-hierarchies involve relationships between legally independent firms in which one is a subordinate of the other, with the chain leader defining and setting rules which the rest of the actors have to comply with. Although the GVC theory offers alternative 'governance structures' as a form of production organisation, the TCA theory offers rich, insightful literature on the assumptions determining the choice of a governance structure. These assumptions are: (1) asset specificity,

(2) coordination and/or transaction costs, (3) frequency/scale of economies, and (4) opportunism.

To build production capabilities, firms undertake asset-specific investment inputs which take a variety of forms such as human assets, physical assets, site specificity, dedicated assets, brand name capita and temporal specificity (Williamson, 1975). However, the degree of asset specific investment depends on the form of governance structure being adopted. For instance, in modular value chains suppliers have production capabilities, implying that supplier dependency on the lead firm 'buyer' is low. This also implies that suppliers can produce for a wide spectrum of buyers, thus making switching costs low. With respect to relational value chains, suppliers have high production capabilities but they rely heavily on buyers for managing complex production information. This produces a balanced or mutual dependency network, requiring explicit coordination and thus making switching costs high. The third category is captive value chains, which are characterised by low production capabilities. Low capability producers are common both in developing countries (Brown & Sander, 2007; Dolan & Humphrey, 2000) and in countries that are new to global markets (Gereffi, 1999, Piore & Ruiz , 1998).

Lead firms involved with producers in such value chains have to incur significant specific investment costs; investment in the human resource has to be treated as an asset rather than a cost (Pettigrew & Whipp, 1993). Studies show that captive chains create a fast track to the acquisition of production capabilities (Humphrey & Schmitz, 2000; 2002; Schimtz, 2005; Brach,& Kappel, 2009). These studies revealed that those producers who gained access to lead firms' chains found themselves on a steep learning curve. The absorption of knowledge

'software' has to be accompanied by physical assets' 'hardware'. Producers, especially in developing countries, lack physical production inputs such as irrigation, greenhouses, fertilizers, trucks, cooling sheds and packaging technologies (Brown & Sander, 2007). Producers also have to be able to sort and grade the produce, document their farming practices and meet tight delivery timelines as demanded by lead firms (Dolan & Humphrey, 2000; Humphrey & Schmitz, 2001). To achieve this level of supplier performance the lead firms offer production inputs, transmit best practices and provide hands–on training on how to improve layout, production flows, and improves skills (Humphrey & Schimtz, 2001).

The need for tight chain coordination to overcome supplier failure introduces the notion of coordination and/or transaction costs, categorised as search costs, contracting costs, monitoring costs and enforcement costs (Williamson, 1985; North, 1990). The lead firms meet the costs of searching and contracting with suppliers and/or farmers, and also have to periodically monitor, audit and inspect their suppliers' production and processing systems (Brown & Sander, 2007). This is done to ensure that produce is grown, processed and transported not only in compliance with set parameters, but is also traceable. Traceability plays a key role in affirming that the farms/firms are able to meet the health, safety, environmental and labour standards demanded by consumers (Schimtz, 2005; Ponte & Gibbon, 2005). Supermarkets, for one, have realised that a failure to meet food safety or environmental standards results in bad publicity and a loss of position in the marketplace (Brown & Sander, 2007).

The previous two paragraphs discussed asset specificity and the transactional costs involved in managing inter-firm relationships. The TCA also recognises the element of opportunism due

to the guile and self-interest exhibited by actors operating in a world subjected to bounded rationality (Williamson, 1990). As a result, the TCA approach advocates for hierarchies where transactions involve high asset specificity, with a purpose of cost minimisation due to transactional costs. On the other hand, the GVCA approach differs from TCA by arguing that relationships are formed for the mutual benefit of the participating partners, as opposed to isolated firms. Therefore, according to GVCA, a mutually beneficial relationship develops trust (Chivaka, 2003; Dyer, 1997), which controls opportunism. On the other hand, relationships in value chains which are perceived not to be mutually beneficial or exploitative are characterised by low levels of trust. A study by Tijaja (2010) on Thai cassava value chains discovered that farmers had a tendency of disregarding their contractual obligations by selling cassava roots to other buyers who were offering better prices. A similar observation was found with farmers contracted by Farmapine Ghana Ltd, who also used credits and inputs for purposes other than pineapple growing, leading to sub-optimal farming practices that affected quality and yield (Brown & Sander, 2007).

This portrays a value chain which may not have been mutually beneficial and was therefore not equitable for the GVC participants. A lack of equitability attributed to perceived unfairness in the sharing of benefits impacts upon value chain competitiveness, because firms have to incur high transactional costs associated with contract monitoring and enforcement. For this reason, this study will investigate whether the relationships are mutually beneficial to the GVC participants or not.

A combination of technical assistance with connectivity and/or strong collaboration provides a platform for building supplier capabilities (Humphrey & Schmitz, 2001). Evidence of successful

collaborative ventures comes from many sectors, including the horticulture industry in Kenya (Dolan & Humphrey, 2000; 2004),), auto industry in China, India, Mexico, four countries of the Association of South East Asian Nations (ASEAN) (viz. Indonesia, Malaysia, Thailand and the Philippines), Argentina, Brazil, and countries in Central Europe (Czech Republic, Hungary and Poland) (Humphrey & Memedovic, 2003), the fresh fruit cluster in Brazil (Gomes, 2006), the salmon farming cluster in Chile (Campos, 2006) and the horticulture industry in Spain (Aznar-Sanchez & Galdeano-Gomez, 2011).

Strong vertical collaboration has been found to enable a combination of technical and investment support that characterises highly governed chains, which explains how relatively underdeveloped regions become major export producers in a short period of time (Humphrey & Schimtz, 2001; Schmitz, 2005); the authors cited the examples of the Brazilian shoe industry in the 1970s and the Vietnamese garment industry in the late 1990s. A similar observation by Chivaka (2003) came from his study of the textile and garment supply chain in South Africa. He ascertained that companies that had closer collaborations in training and assistance achieved a higher diffusion of skills in a shorter time to achieve positive supply chain efficiency levels.

Strong collaboration in horizontal linkages that encourage joint action has also been found to play a critical role in cluster formation. Clusters' joint actions offer opportunities to learn both at the level of individual firms/farms and from relationships between them (Navdi, 1999). Cluster bodies and/or associations (emerging from joint action) provide platforms for the dissemination of know-how, the management of investment funds, and at times the setting up of production facilities and the marketing of products for local GVC participants. Studies on

clusters recognise that the diffusion of production capabilities are not only limited to GVC participants, but there is a skill 'spill over' in a geographical area (Maya-Ambia, 2011; Aznar-Sanchez & Galdeano-Gomez, 2011; Guiliani et al., 2005). This could explain the rise of entrepreneurship in various forms - functional upgrading, new entrants in the value chain and starting parallel competitive value chains. However, Schmitz (2006) argued that despite the fact that highly governed structures contribute to the fast acquisition of production capabilities, they also create barriers for functional upgrading especially in areas of acquisition of design and marketing capabilities. This is because the lead firms have to protect their core capabilities from competition in order to sustain earning higher rents.

2.6 Summary

The literature reviewed four complementary theories to the competitiveness analysis using the GVC framework, which is rich in governance analysis and covers mainly income distribution, private standards for market access, and the development of supplier production capabilities. Despite the GVC framework richness, the framework has weaknesses as it hardly recognise the regulatory regime and/or environment, and the impact of value chain actors/entrepreneurs behavioural practices in the analysis. Failure to address these gaps by the study can render the results questionable of little applicability to the wider academic fields. Therefore, these gaps were addressed by the application of the new institutional theory with respect to the regulatory regime and/or environment and the entrepreneurship behavioural theories addressed the entrepreneur's behavioral practices. The application of complementary frameworks and theories was done with a purpose of strengthening the results of the study. Further, the cluster theoretical approach assesses the gains of clustering as a result of joint action, while the GVC approach explores vertical linkages between firms and external actors. Although both

approaches offer complementary synergies to each other, they do not elaborate on the measures applicable in assessing the strength of the inter-firm relationships. This missing link is filled by the transactional cost approach which provides analytical measures in the form of investment asset specificity, uncertainty, frequency of transactions, and opportunism.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents how the researcher did the research; the chapter specifically outlays how the researcher obtained the data and analysed it in order to answer the research questions

3.2 Study approach

This research employed a case study approach as the major research strategy. The purpose of this research was to contribute towards emerging GVC theory building (Gereffi et al., 2005), hence the suitability of a case study (Eisenhardt, 1989). Case study approach was suitable because the focus was on emerging issues 'contemporary' phenomenon with some real-life context (Yin, 1994). Commercial forestry and sugarcane industry are experiencing emerging value chain practices 'contemporary' phenomenon with a real-life context. Contextualism was proposed initially by the Philosopher Stephen Pepper (1942). Pettigrew (1990, pp.269) asserted that "an approach that offers both multi-level or vertical and processual, or horizontal analysis is said to be contextualist in character". Therefore, the method of inquiry for this study was process – contextual realism, involving both vertical and horizontal analysis in a case study setting.

As suggested by Pettigrew (1990), process-contextual realism entails obtaining data spanning a period of time. Therefore, this study obtained data for a period spanning three years, thus enabling an analysis of consistence and changes in the process outcomes. The research also used field-based and multiple research methods in gathering empirical data to address the research questions. The multiple-method data collection approach involved a questionnaire survey, interviews, archives and observations. The use of multiple methods strengthens the

quality of research (Eisenhardt (1989) and also offers a synergistic value (Birnberg, Shields, &Young, 1990; Atkinson, Balakrishnan, & Booth, 1997; Shields, 1997; Chivaka, 2003) in that the research benefits are more than the summation of the advantages of the methods used. The study also employed information sources such as the Food and Agricultural Organization's (FAO) statistics and survey data, Global Entrepreneurship Monitor (GEM) survey reports, and Global Competitiveness Survey reports from the World Economic Forum (WEF), which provided comparative industry productivity and competitiveness global rankings across countries.

3.3 Study design

There are three types of case studies (Yin, 1981). The first one is an exploratory case study – aimed at defining the questions and hypothesis of a subsequent study. The second one is a descriptive case study – aimed at presenting a complete description of a phenomenon within its context. Finally, an explanatory case study – aimed at examining data closely both at a surface and deep level in order to explain the phenomena in the data sets. The essence of an explanatory case study also is to explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships. The analysis helps in explaining how events happen, happened and possible interventions which happened to be of similar interest with this study.

Therefore, among the three case study types cited above; this study adopted an explanatory case study which was found suitable for a comparative in-depth analysis of the same issues by examining issues in the data sets several times from different points of view. The issues were investigated by looking at entrepreneurial behavioral practices that influence competitive success or failure of enterprises participating in Uganda's agri-business value chains.

3.4 Research setting

Empirical data was gathered from Uganda's commercial agricultural and forestry value chains as representative value chains of the agri-business sector. The value chain is broad and based in line with the commodity value chains for products such as coffee, maize, cassava, fruits, vegetables, sugar cane, and forestry, among others. This study focused on the agri-business sector because of its importance to economy of Uganda. The agri-business sector was chosen as an appropriate research setting mainly for the following reasons:

1. The sectors have continued to experience a decline in production and productivity due to:
    - high costs and limited availability of improved farm inputs;
    - inadequate production and post-harvest facilities;
    - limited extension support and advisory services;
    - land fragmentation and operation by small farmers owning one to three hectares thus inhibiting mechanisation; and
    - weak value chain linkages.
2. there is a mismatch between agricultural growth (which averaged 2.2% in 2008) and the population growth (estimated at 3.5% per annum); the sectors employ more than 70% of the population;
3. a wide fluctuation in commodity prices and erratic weather patterns constrain investments in agricultural modernization;
4. liberalization of the sectors by transiting from state-owned enterprises to private sector-led growth presents both challenges and opportunities for value chain competitiveness;

5. investments in agriculture produce a quadruple effect in the economy compared to other sectors (World Bank, 2010).

An improvement in investment in Uganda's agricultural value chains could significantly alter production and productivity. A structured value chain composed of nucleus farms and/or lead farms that support farmers' clusters is required in order to achieve this level of competitiveness through addressing issues of marketing (forward linkages) as well as production (backward linkages).

3.5 Value chain selection and research

As mentioned in the introduction, the purpose of this research was to contribute to the emerging GVC theory. The selection of the value chains relied on theoretical sampling as opposed to statistical reasons (Glaser & Strauss, 1967; Eisenhardt & Graebner, 2007). Eisenhardt and Graebner (2007) explained theoretical sampling as a means of selecting cases because of their particular suitability for illuminating and extending relationships and logic among constructs. This happened to be the interest of this study.

The following criteria were established for selecting value chains for detailed study:

- Value chains with observable governance structures so as to provide opportunities to compare and contrast results.
- The relative importance of the value chain as a source of income and employment to both farmers and the country at large.
- Value chains that have attracted development partners and/or government support as a tool of intervention for increased production, productivity and value addition.

In applying these criteria, the sugarcane and forestry value chains were chosen for detailed analysis. The recognized differences in the structuring of these value chains suggest that comparisons among them would yield useful insights about entrepreneurial behavioral practices and factors that facilitate or inhibit their competitiveness. As an emphasis the interest of this study was not for generalized application of results to other sectors. And if the results of this study are to be applied to value chains with different characteristics, then this must be done with caution. However, these two value chain constitutes great economic values for the country of Uganda, or for other economies with similar characteristics. Therefore, taken together, these value chains offer interesting possibilities for agri-business development, especially for SMEs, through expanded import substitution and/or exports (Johnston & Meyer, 2007).

3.6 Case study research strategy for selected value chains

This study applied the systematic case study methodological approach advocated by McCormick and Schmitz (2001) for value chain research. The authors stated that "value chain research can be enriched by the inclusion of selected case studies of individuals, firms, and networks" (McCormick & Schmitz, 2001, pp. 140). A case study approach was applicable to this study because of the following: (1) it is considered to be a preferred strategy when investigating 'how' and 'why' questions; (2) it helps to deeply probe the subject matter, thus contributing to an in-depth understanding of the relationship between entrepreneurial behavioural practices and the competitive success or failure of value chains; and (3) value chains are networks linking a defined set of persons, objects, or events. Therefore, value chain assessment requires a case study strategy to study the nature of relationships among actors either vertically or horizontal, i.e. between actors at different levels (e.g. producers/buyers) or

between actors at the same level (e.g. producers/producers). With respect to this study, the case approach helped to facilitate the examination of the main research question statement:

How do entrepreneurs' behavioural practices determine the competitive performance of agri-business enterprises undertaking GVC participation in Uganda?

The research question was broken down into five major independent variables applied in investigating competitive performance; namely critical success factors for value chain competitiveness; equitable value chain sharing; entrepreneurial alertness and regulatory regime; compliance with standards for market access; and vertical and horizontal collaboration for diffusion of supplier production capabilities. In each of these variables the following measures were investigated and then answered as elaborated upon below:

(A) Measures of competitive performance (success or failure) variable:

Competitive performance examines competitiveness as the ability to perform well (Buckley et al., 1988). Adam Smith (1776) identified three measures for the wealth of nations, namely; farm output; manufactured goods; and labour to produce goods. The measures identified by Adam Smith are related to productivity considered as a surrogate measure for competitiveness. This study was interested in agri-business competitive performance, and considered farm output as the leading measure for farm enterprise productivity. In addition to farm output, this study also included time-to-market which is considered to be a global competitiveness indicator as another measure for productivity. The study further adopted country specific industry reports published by the Uganda Sugar Manufacturers Association (USMA) which consider farm output of 100

tons/ha as the baseline productivity measure of cane maturity of 18-20 months (Uganda National Sugar Policy, 2010; USMA, 2015). The forestry sector productivity reports were obtained from the saw log production grant scheme, assessing performance of growers and providing indicative productivity measures (SPGS, 2014). The FAO Stat survey data base 2013- was also a useful source of information for providing country comparative productivity data by ranking in terms of yields per unit area. The USMA and National Sugar Policy productivity measures reflects the true picture in the field as this was validated by cane delivery reports of farmers to the sugar mills. The SPGS report is an evaluation conducted in farmer's fields and generally reflected the true picture in the field, although being a donor funded project you may not rule out some possibilities of over-stating the data performance for purposes of attracting more development partners financing. The FAO report stat data produced for different countries may not entirely be reliable as the major source of data capture is mainly from government officials who may underreport for purposes of seeking sympathy from development partners to fund priority sectors and/or data may be over-stated for purposes of attracting foreign direct investments in the country.

(B) Measures of critical success factors for value chain competitiveness

GVC studies provide key success factors for value chain competitiveness (Schmitz, 2005; McCormick and Schmitz, 2001). In their approach, buyers were asked to rate their suppliers' performance using a five-point scale on each of the above criteria. Suppliers were then asked to rate their own performance using the same criteria and scale. This self-assessment, when compared with the buyers' assessment, provided a powerful lens for assisting the entrepreneurs to identify where they might be failing and where improvement was required. The tool has

received wider application in the Dominican Republic garment industry (Bessant and Kaplinsky, 1995), the furniture industry in South Africa, Indonesia and Brazil (Kaplinsky *et al*., 2003; Ewasechko 2005; Navas-Aleman 2011), and the auto industry in South Africa (Barnes, 2000). The above studies applied the criteria below, although with minor deviations on the following critical success factors:

- Quality reliability (clean, high sucrose, straight, pruned)
- Price reliability (stable, rising)
- Time from order to delivery (reliable as per industry standards, speedy)
- Quantity reliability (output above industry standards)
- High quality yielding seeds/seedlings (innovations).

However, during the interview the researcher identified other variables in the Ugandan context as critical success factors in addition to above:

- Personal involvement in business
- Passion or interest in business
- Cash flow
- Community relationships.

The respondents were asked to rate their performance basing on a 5 likert-scale ranging from 1 (not important) to 5 (very important).

(C) Measures of equitable value chain sharing of proceeds (millers-growers)

Worldwide the sugar industry payment system is based upon formulae prescribing the division of proceeds between millers and growers. The World Association of Beet and Cane Growers

(WABCG) undertake a comparative percentage measure of the division of proceeds from cane and beet producing countries between growers and factories (WABCG 2015). Therefore, this study analyzed measures for the equitable division of proceeds between millers and growers by comparing the percentages offered to Ugandan growers to what other regional countries offer their growers with respect to sugar and its by-products-in particular the South African Development Community (SADC) countries (South Africa Sugar Industry Agreement, 2000) and the Mauritius Cane Industry Authority Act (2011). Although the forestry sector was not based on a prescribed formula, a similar approach was applied by examining country reports, South Africa ((DFID, 2005) and for Uganda using field data to obtain approximate percentages of share proceeds received by growers in the value chain.

(D) Measures of entrepreneurial alertness and regulatory regime

Measures for entrepreneurial alertness were adopted from the GEM survey report (2014) that measures entrepreneurial alertness as the ability to perceive opportunities and capabilities to pursue the perceived opportunities. The opportunities measured by this study included alertness to availability of; grant incentives, ease of doing business factors e.g., access to farm inputs and good infrastructure such as roads, and factor production endowments e.g., favorable climate. Other opportunities measured included ability to pursue opportunities such as value chain process upgrading (horizontal value chain expansion such as increased yields, machinery acquisition), value chain functional upgrading (vertical integration along the value chain by investing in value addition/processing plants), business formalization strategy (enabling the enterprise to graduate from the informal to the formal economy), and business generation

strategy (investing in succession plans through mentoring for business continuity beyond founder member).

Measures for the regulatory regime included assessing property rights ownership and governance. Measures for property rights ownership were assessed in terms of monopoly and/or anti-monopoly policies which either influences rent-seeking or promote innovation in the respective industry (World Bank, 2012). Governance with emphasis on governance power was assessed in terms of equitable representation of millers and growers on industry boards for consensus decision-making, with lessons from SADC governance models (The South African Sugar Act 1978; South African Sugar Industry Agreement 2000).

(E) Measures of compliance with standards for market access

GVC studies provide measures regarding compliance with standards for market access (Gereffi et al., 2005; Schmitz, 2005; McCormick and Schmitz, 2001). What is to be produced? assessing availability of formal quality specifications documents. How it is to be produced? assessing availability of production/process standards manuals. When it is to be produced? examining the timing of production and deliveries. How much to be produced? assessing quantities specifications. What price mark to be offered? assessing if set price is tagged upon a grading system, i.e. quality. This study adopted these measures that were assessed in three broad variables that is production standards, pricing as per grading system and certification initiatives.

(F) Measures for vertical and horizontal collaboration for diffusion of supplier production capabilities

The transactional cost approach provides measures for assessing the strength of the coordination mechanism either through hierarchies or spot markets (Williamson 1975). The measures include; asset specificity investment costs (physical production inputs, training and skills development or 'positive spill overs'), coordination investment costs (search/screening, contracting, monitoring, enforcement), frequency of the transactions, and quality of relationships i.e. mutually beneficial or exploitative relationships. This study adopted these measures except frequency of transactions in assessing the strength of vertical and horizontal collaboration in building supplier production capabilities in the value chains (Dolan and Humphrey 2000; Humphrey and Schmitz 2001; and Gereffi et al., 2005).

3.6.1 Scope of value chain research analysis

The scope of the study was mainly focused on the vertical relationships between the main producers/exporters firm(s) within Uganda and their suppliers/farmers. However, the horizontal relationships between farmers and/or development partners were also examined with the objective of identifying additional insights about the sectors' ecosystem, such as joint action initiatives.

3.6.2 Selection of cases for study/production data sample size

This study used VC analysis, which is mainly about relationships, that is, hearing multiple sides of a story. For this reason, the entry point of the study was clusters with lead firms and/or major buyers in a GVC. The lead firms in the GVC were considered to be those that either set parameters by which others operate or firms undertaking major buying activities, i.e. lead

buyers. A list of primary producers was obtained from the cluster development agency and lead firms, i.e. Kinyara Sugar Ltd (KSL) for the sugar sector and Saw Log Production Grant Scheme (SPGS) for the forestry sector. These lists were also verified through the sector associations, i.e. the Masindi (Kinyara) Sugarcane Growers Association Ltd (MSGAL) and the Uganda Timber Growers Association (UTGA). However, the researcher found that not all commercial forestry growers supported by SPGS belonged to the UTGA. Therefore, the researcher maintained the SPGS list to access the respondents.

Two cluster VCs out of the six were selected for the study. In each of the cluster VCs, the presence of a major lead firm(s) linked with a growing number of supply firms and/or entrepreneurs was the criterion for selection. In this study, polar opposites of Ugandan commercial farmers were selected, namely high and low performing entrepreneurs. However, since the study was interested in the systemic improvement of all actors in the primary value chain, medium performing entrepreneurs were also included.

The qualification of performance was based on productivity or performance ratings obtained from KSL inventory data base and SPGS inventory data base as per the below:

(1) Primary producers having achieved contract performances of 90% and above were classified as high performers in the forestry sector.

(2) Primary producers operating at 50% and below of contract performance were classified as low performers in the forestry sector; the medium performers were the producers that attained between 51% and 89% contract rating performance.

(3) Primary producers with approximately 70% of block fields achieving 100 and above tons per ha were considered to be high performers while those producing below 70 tons

per ha were considered low performers; the medium performers were the producers that attained between 70 and 99 tons per ha.

(4) Exceptional performers (role model entrepreneurs) were identified by the researcher through awards received and/or through being recognised by peers in the industry. These were interviewed for lessons to be learnt.

The approach of selecting players and categorising them into high and low performers is consistent with Pettigrew (1990), which used this approach while studying strategic change and competitiveness in the United Kingdom. The purpose of choosing polar opposites - one successful case and one unsuccessful case - was to build a theory of success and failure (Eisenhardt, 1989). This happened to be similar to this study, which was interested in investigating how the behaviour of entrepreneurs determines the success or failure of agri-business value chains. Unlike the study by Pettigrew (1990) which only concentrated on high and low performers, this study included medium performers. This was because the purpose of this study was to achieve a systematic improvement in the competitiveness of the entire value chain.

Further, the presence of large firms in a cluster has been found to result in investment in research and development (Schumpeter, 1934), a key ingredient for the transformation of agriculture, which is therefore relevant to this study. This study was interested in entrepreneurs practicing agri-business for commercial purposes. For practical reasons, this study adopted the Saw Log Production Grant model that qualifies commercial enterprises with a minimum area of 25 hectares. The purpose of selecting commercial entrepreneurs was that they tend to manage their enterprises from both an entrepreneurial and a commercial aspect, with the

intention of graduating to the formal economy. On the other hand, the majority of small players perceive their business as "survival entrepreneurship", with little incentive for business growth. Table 3.1 indicates the population of actors in the sugar and forestry sectors in Uganda.

Table 3.1: Population sample

Stakeholders/cases	**Sugar Industry (Kinyara-Masindi Cluster)**	**Forestry Industry (*all six clusters taken as one Cluster)**
Estimated primary producers	6,000	389
Commercial Primary Producers (registered)	105	389
Commercial Primary Producers (functional)	77	298
Millers and/or Major Buyers	1	04
Industry associations	1	1
Policy bodies	1	2
Development Partner Agencies/Private Sector Development Agencies	0	2

Source: Kinyara Sugar Ltd. inventory data base, SPGS inventory data base and key informants resources. **Note:* estimated total commercial forestry plantation is 40,000 ha in Uganda, while the Kinyara Sugar area alone has an estimated 15,000 ha (nucleus farm) and 25,000 ha (out-growers).

Table 3.2: Sample size and observed data

Stakeholders/cases	**Sugar Industry**		**Forestry Industry**	
	Target	Achieved	Target	Achieved
Primary Producers (All functional survey)	40	32	60	46
Primary Producers (All functional qualitative)	6	6	6	6
Millers and/or Major Buyers	2	2	2	1
Industry associations	2	2	1	1
Development Partner Agencies/Private Sector Development Agencies	0	0	1	1
Total	**50**	**42**	**70**	**55**
Site observations (Field)		6		6
Plants visited (Mills)		1		2

Performance data for the forestry sector was obtained from the SPGS performance report. The total number of registered producers was 389 of which 298 where functional. Production data from field blocks was obtained from Kinyara Sugar Limited. The data obtained was for the years 2010/11 to 2012/13 financial years. The production report indicates a block field size, yields obtained and actual yield per hectare. The total number of out-growers in Kinyara Sugarcane Cluster was approx. 6,000, of which 105 were registered. Approximately 77 commercial producers were functional. The total number of anticipated cases participating in the study was approx. 100 (survey tool) and 20 (qualitative tool or interviews), constituted into the two value chains. The response rate was 46 questionnaires and 9 interviews for forestry while sugarcane was 32 questionnaires returned and 10 interviews, all representing 81% response rate. The researcher kept on following up the respondents in order to reduce non-response rate within the sample that received the questionnaires. When the researcher achieved a response rate of 81%, this was considered good enough to proceed with the study.

This sample size of received responses was found appropriate for studies of this nature, whereby Eisenhardt (1989) recommended a number of cases between 4 and 10 as appropriate. Chivaka (2003) studied nine cases of firms (comprising both buyers and manufacturers) operating in three supply chains in South Africa, however other studies have utilized above 80 cases (Hildbrand, 2013).

3.6.3 Crafting instruments and protocols: data collection

The study was built on two types of information: quantitative data and qualitative data. The combination of data types is highly synergistic (Birnberg et al., 1990; Atkinson et al., 1997;

Shields, 1997; Chivaka, 2003). Eisenhardt (1989) argued that quantitative evidence reveals relationships that may not be salient to the researcher; however, she also observed that quantitative data bolsters qualitative findings because it keeps the researcher focused and not "carried away by vivid, but false, impressions in qualitative data" (pp. 538). On the other hand, Jick (1979) pointed out that qualitative evidence is useful in understanding the theory underlying relationships. This study gathered similar data from different sources (triangulation) to strengthen data quality. The following multiple data collection methods were employed:

3.6.3.1 Questionnaire survey:

A structured questionnaire was used for capturing mainly quantitative data coupled with some qualitative data. The quantitative data collected were both subjective, i.e. the perceptions of the respondents, as well as objective, i.e. information related to the yields, revenue, age of firm, among others. The questionnaire was divided into different sections, with each section representing a specific major variable with its associated sub-themes that helped in answering the research questions.

3.6.3.2 Purpose of survey questionnaire

The premise of the survey questionnaire technique was to establish the behavioural practices of entrepreneurs in stimulating or hindering Uganda's competiveness in agricultural global value chains. The study focused on analysing entrepreneurial practices applied in the primary production sector from the perspective of the primary producers. The questionnaire was put to selected respondents in these value chains, i.e. commercial farmers. The 'bias' arising at this stage from this approach was counteracted by in-depth interviews that were administered to

key informants - miller(s) representatives, association and agency executives, exceptional high performers, and the selected medium and low performers.

3.6.3.3 Questionnaire development

The questionnaire was divided into different sections according to specific themes. The themes were related to a number of value chain practices pursued by entrepreneurs, and at the same time helped the author to gain an appreciation and understanding of the value practices and behavior.

Although the questionnaire was divided into different sections, collectively they reflected a continuum of inter-linked activities and processes that gave an insight into the value chain practices in Uganda's agricultural industry. While the studies mentioned above were conducted mainly in the manufacturing and retail sectors (Bessant & Kaplinsky, 1995; Kaplinsky et al., 2003; Navas-Aleman, 2004; Ewasechko, 2004; Barnes, 2000) this study was based in the primary production sector. Further, this study collected views from primary producers. The primary producers were asked to score their own self-assessment which helped to identify gaps for the improvement of the value chain (Schmitz, 2005; McCormick & Schmitz, 2001). In most of the sections, respondents were asked to rank their responses on a five-point scale of 1 (not important and/or not agree) to 5 (very important and/or strongly agree) by ticking a corresponding box.

3.6.3.4 Administration of the questionnaire

The questionnaires for the identified suppliers and/or farmers were physically delivered and picked up. The questionnaires were also administered in workshop settings organized by SPGS

for the forestry sector, in which the author was allocated time to administer the tools and pick them at the end of the days workshops. These strategies have been found to be appropriate in developing countries such as Uganda due to low levels of education as well as the variety of local languages, which makes it difficult to determine in advance the respondents' preferred language (McCormick & Schmitz, 2001).

3.6.3.5 Interview protocol

The survey questionnaire was the main data-collecting tool, which was complemented by the interview guide, observations and documentary reviews. The interviews were with key informants for an in-depth analysis. The key informants were primary producers and millers who included best performing entrepreneurs/farmers, medium performing entrepreneurs/farmers and poor performing entrepreneurs/farmers. In addition, interviews were also conducted with industry specialists such as chief executives of industry associations, programme specialists of development partner agencies, and opinion leaders (who were local where applicable), who had a wide knowledge of the industry.

The choice of which major buyers and/or millers to approach was of a great concern to this study because they were considered to be the key entrepreneurs driving the chain. The millers wield great power, thanks to their size and position. Therefore millers influence any entrepreneurial practices that may impact the value chain positively or negatively. In Uganda the sugar industry is dominated by three major estate producers - Kakira Sugar Works Limited (KSWL), Kinyara Sugar Limited(KSL), and Sugar Corporation of Uganda Limited (SCOUL), commonly known as the 'big three' supplied with out-growers' schemes. The three major players constitute more than 80% of the sugar market. The forestry sector is dominated by four

private sector players which operate plantations and one public corporation - Uganda Electricity Distribution Company Limited (UEDCL), which specialises in transmission poles. The sector has received much support from the SPGS.

The interview tool was unstructured in the sense that the respondent had enough room to answer. During the interview, probes (immediate follow-up questions) were used subject to the answer that a respondent had given to that particular question. The interviews lasted for 60 to 90 minutes, and were recorded (where permitted) and transcribed. Two researchers were involved in order to minimise interviewer bias (Greenwood & Suddaby, 2006).

The instrument collected similar data on the five sub themes (as collected by the survey questionnaire) for triangulation and building data quality purposes. While conducting interviews the researcher also undertook a document review, which included minutes of relevant meetings, sample contracts, company reports, policy documents and secondary quantitative material on activity levels. Observation was also carried out at company facilities, on field site visits with the help of a camera, at informal and chance meetings, and during conversations. Collecting data from different sources helped the researcher to substantiate, supplement and cross check information.

3.7. Data coding, analysis and presentation

The principal unit of analysis in this research was the entire value chain, which was explored and analysed at three levels: Micro (grower's enterprises), Meso (industry experts, millers and association executives in the value chain industry), and Macro (assessment of national policies

and the regulatory environment). Principal component analysis was run for the purposes of data reduction and to group items. The empirical data was analysed using within case analysis, which enabled the researcher to become intimately familiar with each case as a stand-alone entity, while cross-case pattern analysis enabled constant comparison of the theory and data, iterating towards a fit between theory and data.

3.7.1. Within-case analysis: performance categories and VC sectors

This analysis involved detailed case study write-ups for each VC. Primary data collected by the survey questionnaire were processed, coded and analysed. Quantitative (numeric) data such as production capacity and years of establishment were coded immediately. Answers to closed-ended questions, with an assigned possible list of responses, were treated as quantitative data. These were pre-coded on the questionnaire. Using Statistical package for social scientists (SPSS) version 20, the data were then analysed using descriptive statistics (means, standard deviation and ranking) and correlations. The analysis of data from the responses to the questionnaire produced empirical evidence relating to relationships and practices among performance categories that is high performance enterprise (HPEs), medium performance enterprises (MPEs) and low performance enterprise (LPEs) and between VC sectors, which fitted into the major variables being studied. As suggested by Yin (1981), the quantitative data were tabulated alone, before triangulation with the qualitative data. This study presents the quantitative data through tabulated formats, t-tests and visualised radar charts – sometimes called star diagrams.

With regard to the descriptive qualitative data, which had a wide spectrum of answers, a process of reduction or summarization, classification and interpretation using Nvivo qualitative

software was applied. The qualitative data analysis used thematic and content analysis. Based on the five themes and some direct quotations are included in the analysis. The five themes were:

i. Critical success factors for value chain competitiveness;
ii. Equitable value chain sharing,
iii. Entreprenurial alertness and regulatory regimes,
iv. Compliance with standards for market access,
v. Collaboration for diffusion of supplier production capabilities (vertical and horizontal linkages),

The design of the data collection tools followed the five themes and the data analysis as well. This was informed by the theoretical frameworks described in chapter two that is the chapter on the literature review. In order to improve the trust in the results from the collected data, a systematic analytical protocol as suggested by Miles and Huberman (1994) was adopted. The procedure was as follows:

- The data collected were arranged into a condensed, chronological account, with each data segment being coded according to the major themes in the interview guide. This was done for the purpose of utilizing all collected data in the analysis, rather than using selective 'quotes', to support anecdotal evidence. The 'data segments were retained in the original wording'. Data coding promoted completeness of data analysis and minimized potential bias while analyzing the data. Further, this enabled the researcher to search for supporting and contradicting evidence of relations identified, and also provided an audit trail which enables a reader to trace the source of conclusions back to original data.

- After, establishing the chronological account, the data was then arranged for each of grouped case of the primary VC actors and key informants. Responses were matched around specific questions. The aim was an attempt to capture the justificatory accounts of different actors relating to value chain practices and relationships.

As suggested by (Yin 1981), in building an enriching case study, both qualitative and quantitative data that address the same theme were assembled together. This entailed presenting narrative descriptions. The narratives were coupled with tabular displays, star diagrams and figures about each VC case. The idea behind this approach was to enable the researcher become familiar with each case as a stand-alone subject matter. This approach allowed unique patterns to emerge for each case before generalizing patterns across cases. Further, it gave the researcher a rich familiarity with each case, which in turn laid a fundamental foundation for cross-case analysis or comparison.

3.7.2. Cross-case analysis: performance categories and VC sectors

The cross-case analysis involved a search for patterns to establish comparisons (Yin, 1981; Eisenhardt, 1989). The methods used in this study included:

The first strategy was to group categories or dimensions, and then search for within-group similarities coupled with inter-group differences. Cases can be grouped in categories such as: founder run vs. professional management; high vs. low performance; first vs. second generation product; and large vs. small size. A study by Bourgeois and Eisenhardt (1988) on the above group categories found interesting results with high vs. low performance, but no clear patterns were found in the other categories. As suggested by Eisenhardt (1989),

Bourgeois and Eisenhardt (1988) this study grouped cases into categories such as high performing enterprises vs. medium performing enterprises vs. low performing enterprises, and the sugarcane sector was considered as a case vs. the forestry sector case.

The second strategy was to select duo (two) cases and then list the similarities and differences between each pair. This was mainly for the sector level analysis.

The third strategy was to arrange the data by source. This included analysing data based on the tool that collected the data, i.e. observational data, interview data and questionnaire data. The results emerging from different data sources provided unique insights. Eisenhardt (1989) advocated the unique insights by stating that: "*When a pattern from one data source is corroborated by the evidence from another, the finding is stronger and better grounded. When evidence conflicts, the researcher can sometimes reconcile the evidence through deeper probing of the meaning of the differences" (pp. 541)*

As advocated by Eisenhardt, this study analyzed data patterns from one data source with another data source and were data corroborated by another, the findings were stronger and better grounded. When there was contradicting evidence, the researcher reconciled the evidence through deeper probing of the meaning of the differences. The researcher employed these strategies for the purpose of improving the fit between the data and theory to inform the emergent GVC theory.

3.8 Validity issues

3.8.1 Internal validity

The research was motivated by the need to add to knowledge regarding how entrepreneurial behaviour stimulates or hinders the competitiveness of agricultural value chains in a globalizing world. The focus of the research can best be described as an explanatory case study. The essence of this study was to explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships in the commercial sugarcane and forestry value chains in Uganda. The results obtained assisted in illuminating entrepreneurial behavioral practices and competitive performance relationships of value chain actors, thus explaining how events happened with a purpose of contributing to the emerging GVC theory building. The relevance of applying internal validity criteria to assess the research results and conclusions was questionable (Abernethy et al, 1999, cited by Chivaka, 2003, pp. 98). Borrowing from Chivaka's (2003) work, this study did not apply the internal causal relationship criteria, but rather applied the Golden-Biddle "notion of plausibility" to assess whether the data collected supported the conclusions reached. The primary checks on validity were thus among and between the respondents (Dyer, 1997) and the multiple sources of data collection (Jick, 1979; Yin, 1981). Data that were consistent across multiple sources and multiple sites were considered to offer the most plausible findings. On the other hand, evidence that enabled the elimination of competing explanations was documented.

3.8.2 External validity

This research utilized a case study research strategy, which focused on theoretical generalization as opposed to statistical generalization (Eisenhardt, 1989). The purpose was to illustrate and support more theoretical arguments and dynamics by locating the specifics of a few cases within the emergent GVC theory (Gereffi et al., 2005). Therefore attempting to achieve external validity was not considered relevant, because this study did not aim to generalize the results across the whole population.

3.9 Ethical issues, pilot study and field entry

The study in general and the data collection process specifically were based on a cardinal ethical precept - 'do no harm'. In this context the research was expected to cause no injury- physical, psychological, economic or social - to the people being studied. Participation in the study was voluntary and consensual. The privacy and confidentiality of respondents was safe-guarded and this was communicated by the researcher to the respondents.

The researcher obtained a letter of ethical clearance from the University of Cape Town, as well as a letter of introduction from a local institution, Makerere University Business School, to reassure the participating firms and individuals that the purpose of the study was for academic and not commercial interests. The researcher provided assurances regarding the dissemination of relevant publications of the research findings, i.e. research institutes, trade associations, academic journals, industry platforms and conferences, relevant public policy institutions.

During the process of data collection, the researcher initially piloted the study for three months to establish a rapport with the relevant stakeholders and to test the instruments. The piloting

was initially done in South Africa during investment tours and congresses. This was done to enable the researcher to capture salient issues from South Africa since it has a well-developed sugar and forestry industry dating back centuries. The issues captured were integrated into the research instruments then piloted in Uganda to customize the constructs within the local setting. The South African study and data were also used as lessons for the Ugandan experience during the data analysis and documentation. This was then followed up with a full-scale nine-month data collection process from the identified GVC participants in Uganda.

3.10. Research validation and dissemination

The researcher disseminated his research findings through four workshops that were conducted in Uganda as a process of achieving validation. Two validation workshops were held in the forestry sector and two in the sugarcane sector. In the four workshops the audience was the primary producers, the millers' representatives, government representatives and development partners. The researcher also made submissions in policy consultative meetings at Ministerial levels and Parliament Select Committee and publicized print media articles in Uganda with purposes of informing public policy reforms in Uganda's agri-business and specifically the drafting of the Uganda Sugar Bill 2015.

In addition, the research findings were also disseminated at international conferences including: Research paper presented by Michael Mugabira on topic: Value chain analysis: critical success factors for competitiveness in Uganda's commercial sugarcane industry, at 88th SASTA Congress- International Conventional Centre Durban, 18-20th August 2015.

Research paper submitted and accepted at the XIV World Forestry Congress, Durban, South Africa, 7-11 September 2015 by Mugabira M., Chivaka R., Dickens Sande D B & Kavuma D, Key Success Factors For Commercial Forestry & Sugar Value Chains In Uganda: A Comparative Study Of Linking Producers To Markets

Research paper presented by Michael Mugabira on topic: Productive, unproductive and/or predatory entrepreneur-ship: a value-chain analysis of institutional reforms in Uganda's sugarcane industry with key insights from South Africa and Kenya , at the 29th ISSCT Congress, 5-8th December 2016, International Convention and Exhibition Centre, Changmai, Thailand.

Version of the ISSCT Research paper above due for presentation by Michael Mugabira on topic: Institutional reforms and productivity of Uganda's sugar industry at the forth-coming Council Meeting of the World Association of Beet and Cane Growers, 11-15 March 2017, Yamoussoukro – Ivory Coast.

3.11 Summary

The study examined how the different types of entrepreneurs (high, medium and low performers) determine value chain competitiveness, by being productive, unproductive and/or having predatory behaviours. Data in relation to what motivates entrepreneurs and the resulting entrepreneurial activities were collected. The chain-governance themes examined were critical success factors for value chain competiveness, equitability in value chain sharing of proceeds (appropriation of rents and distribution of income), entrepreneurial alertness and regulatory regime, compliance with standards for market access, and vertical and horizontal collaboration

for diffusion of supplier production capabilities ‘positive spill-over’. The effect of these variables on systemic chain improvement was analysed. The results of the study, which provided new knowledge and insights on what makes agri-business value chains work in global markets, are discussed in Chapter 4.

CHAPTER FOUR: UGANDA'S COMMERCIAL FORESTRY AND SUGAR INDUSTRY VALUE CHAINS

4.1 Introduction

This chapter provides a narrative on the evolution of the commercial forestry and sugar industry sectors in Uganda. Industry competitiveness within the existing market governance structures and the applicable regulatory regimes and policies of both commercial forestry and sugar value chains are also presented.

4.2 Overview of commercial forestry

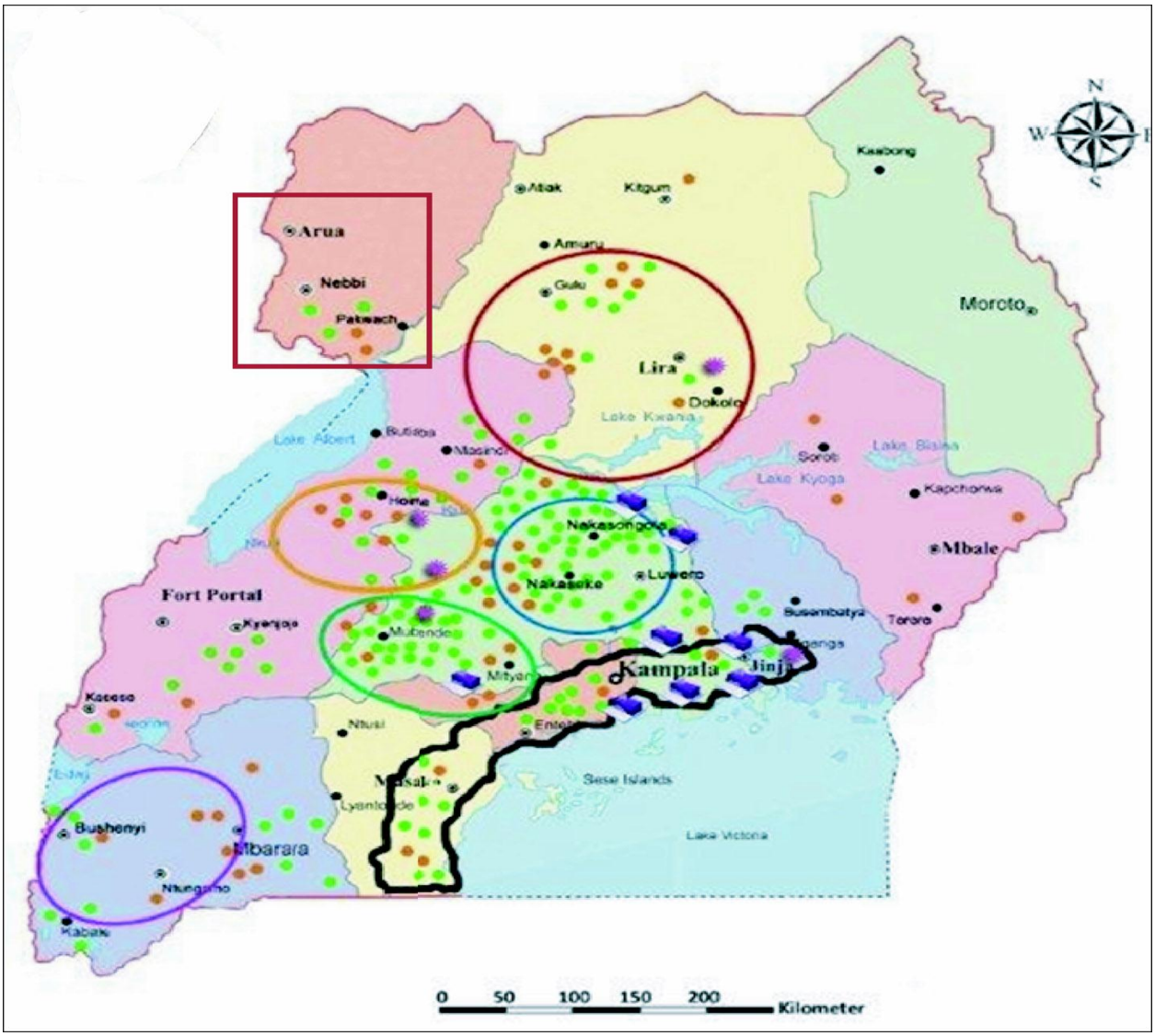
There is a common folk tale in Uganda, which tells the story of a Ugandan lady from the Busoga tribe who had married a German husband and brought him for a visit to Uganda. The couple was welcomed at the airport and on their way home they passed through the Mabira Forest ('natural forest'). The foreign visitor inquired how the forest came into being and was told "gyamera gyene", meaning that the trees grew by themselves. The emergence of commercial forestry has since changed people's perceptions in Uganda; the locals have come to understand that trees are also grown for business like any other cash crop, thus qualifying commercial forestry as an agriculture enterprise.

Agriculture remains Uganda's central engine of economic growth and poverty reduction, providing 72% of the country's jobs and 54% of total exports, generating 25.3% of Gross Domestic Product (GDP), and providing raw materials for the agro-processing industries (NDP II, 2015). Commercial forestry in Uganda has emerged in the form of seven clusters, as shown in figure 4.1 below. The rise of commercial forestry is quite important as the country faces

alarming rates of natural deforestation estimated at 1.8% annually (National Forest Plan, 2013). According to the Ugandan Forestry Policy (UFP) of 2001, forestry makes a significant contribution to the economy of Uganda in terms of both environmental services and biodiversity values. The UFP (2001) acknowledges that although these ecological services and values are unquantifiable, they are integral to agricultural productivity, climate mitigation, soil and water conservation, nutrient recycling as well as to provide unique genetic resources and diverse ecosystems.

It is against this background that the National Forestry Plan (NFP) of 2013 and the NDP II (2015) intended to focus their investments in the following priority areas: planted trees and forests; restoration of degraded natural forests; promotion of forest-based industries and trade; forest law enforcement and governance; and ICT in forest management.

Figure 4.1: Map of Uganda showing commercial forestry clusters



Source: Uganda Timber Growers Association (nd)

4.2.1 Global competitiveness and the value chain governance structure of the commercial forestry

The Ugandan commercial forestry industry's competitiveness is anchored upon the Sawlog Production Grant Scheme (SPGS), which has been facilitated by support from the European Union, the government of Uganda and the government of Norway since 2004. The government

of Uganda leased its forestry land to private investors as an incentive to attract commercial forestry investments. The SPGS provides resources for both technical and financial incentives to mainly commercial producers (with at least 25 hectares). The grant is a cost–share investment arrangement, with the beneficiaries meeting about 70% of the plantation establishment costs while the grant covers approximately 30 to 40%, depending on the investors' establishment cost structures[1].

The incentive promotes responsible commercial forestry investments based on meeting economic benefits, coupled with social and environmental sustainability. The recipients access the financial incentive after they establish plantations and meet specified standards in their production contracts. The disbursement is made in three phases: 50: 25: 25% over two years. Further, all the grantees and their field staff undergo continuous training in managerial and silvi-cultural practices. While SPGS provides the grant and technical training and ensures the maintenance of standards, it quickly realised that owing to its being a government project, there were areas of service that it could not offer such as lobbying and advocacy, i.e. there was a need for an organisation that could do so, hence the formation of the Uganda Timber Growers Association (UTGA).

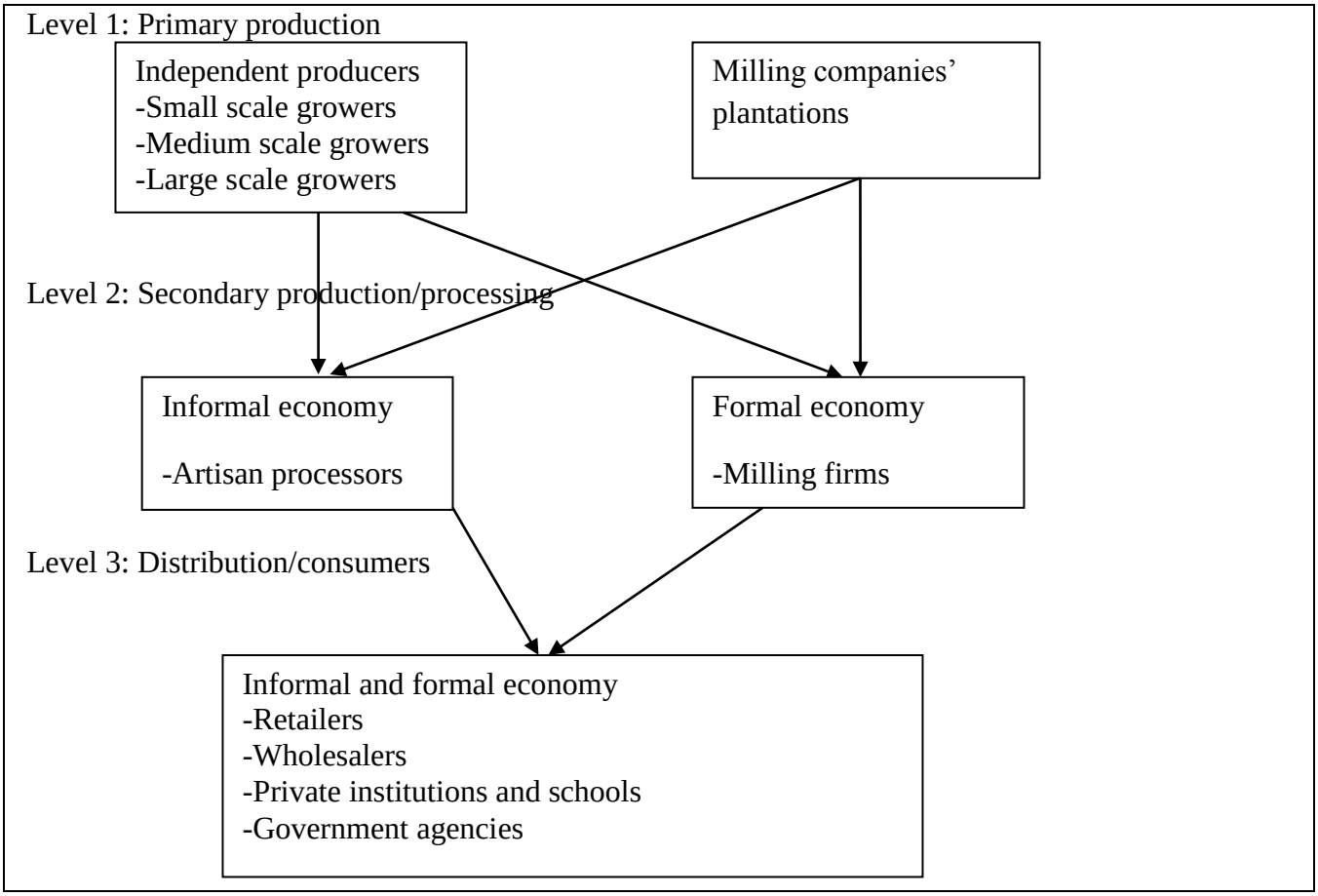
Currently forestry is a competitive and booming business, with plantations across the country. Its attractiveness and growth has outpaced the traditional commercial plantations of sugarcane and tea. It is estimated that 50,000 hectares (SPGS, 2014) of plantations meeting minimum standards have been established, with a membership of approximately 400 investors. The

[1] Field interviews

investors are considered middle-class. This is in contrast with traditional commercial sugarcane and tea enterprises, which have peasant investors forming the backbone of the respective industries. Each of these enterprises provide employment and other benefits, but commercial forestry is proving to be the most effective government strategy to leverage funds from the middle class to create jobs in the countryside. A range of tree species have been planted but two are predominant - pine and eucalyptus. The industry has started producing second and third thinning pine logs for the emerging plywood industry, with the majority of investors[2] coming from China. Eucalyptus is mainly grown to supply transmission poles for the ever-increasing demand for electricity distribution in the East African region. Generally, the existing market structure of the forestry industry can be described as operating both in a formal and an informal economy (see figure 4.2).

[2] Five plywood mills in the country of which three are of Chinese investors

Figure 4.2: Showing the value chain governance structure: Uganda's Forestry industry



Source: Author

Level 1 - Primary production involves independent growers (large, medium, and small-scale) and milling companies that own plantation estates.

Level 2 - Secondary production/Value addition in the formal economy and informal economy: the informal economy is characterised by rudimentary processing methods, with many buyers dealing in mainly structural timber and wood for furniture. The formal economy is traditionally dominated by milling firms structured in the form of hierarchies (they own plantations and partly source from growers and state plantations) and new entrants, especially Chinese milling

firms, sourcing all their raw materials from growers. The main products from milling firms include plywood, poles for power transmission and distribution, construction timber, and boards for the furniture market.

Level 3 – Distribution/consumers: this level is composed of the retail and wholesale timber yards that operate mainly in the informal sector/economy. The milling firms operate in the formal sector and supply private institutions, schools and government agencies. The above market structure suggests that the commercial forestry value chain operates in two extremes of governance typologies - hierarchies and arm's length market transactions. The rise of hierarchies can be attributed to forestry being a capital-intensive long-term investment, which suggests high asset investment specificity. This necessitates investment milling firms undertaking backward value chain integration to produce raw materials that can sustain plant production. Forestry, being a capital-intensive long-term investment, thus discourages the rise of private growers. This could explain the intervention of the SPGS project with its incentives for the establishment of private commercial forests, and thus the existence of arm's length market transactions alongside the hierarchies. However, the challenge facing the arms' length market transactions is the small number of millers/buyers (i.e. an oligopsony) in the formal economy who are mainly located in the main cities, i.e. they are far away from plantations with increased logistics transactions. According to Porter's Five Forces Competitive Model (1979; 2008), buyer concentration or the number of buyers in relation to producers determines power leverage in the industry.

Applying Porter's model to the context of Uganda's formal market economy, it can be described as a buyers' market – they have the power to determine prices. Although the informal economy with its many buyers could be an alternative market, most lack the financial capabilities and absorption capacity for the raw material. This implies that if the growers do not happen to realise a fair competitive return on their capital-intensive long-term investment, then they may not re-invest back into the business. The presence of an organised growers' association (UTGA), possibly with external intervention, thus provides a platform for the shaping and re-shaping of the governance structure. This implies that the arms' length market transactions may shift to a vertically integrated co-operative typology, possibly through the acquisition of own mills or mergers with new mills (that have no own plantations) to ensure a fair return on investment and industry competitiveness.

The competitiveness of Uganda's commercial forestry industry is attributed to comparative advantages, such as trees taking less time to mature than other regional/SADC countries (see table 4.1).

Table 4.1: Comparison of forestry growth within selected SADC countries

Country	Pine Rot Per (yrs)	Pine MAG cc/ha	Eucalyptus Rot Per (yrs)
South Africa	23	15	12
Zimbabwe	21	14	12
Uganda	16	25	8
Tanzania	21	14	12

Source: SPGS (2014); Chamshama (2011)
Note: MAG - Mean Annual Growth; Rot. Per – Rotation Period; cc – cubic meters.

Table 4.1 indicates that Uganda also has the comparative advantage of early market production, whereby transmission poles are harvested at eight years and pines for sawn logs at

16 years, while other countries require 12 years and 21 or more years respectively, meaning a market lead time or lag time of four years and five years respectively. In Uganda, pine trees accumulate 25 cubic metres of wood volume annually per hectare compared to 15 and below for other countries.

4.2.2 Applicable regulatory regime and policies in the forestry sector

The National Forestry and Tree Planting Act 2003 is the law governing the forestry sector in Uganda. The Act is also supported by the Uganda Forestry Policy (2001), which provides direction for the development of the sector through policy statements. The National Forest Plan (2013) provides synergies to the National Development Plan I (NDPI) and National Development Plan II (NDPII). Both national development plans placed forestry at the centre of Uganda's development agenda by classifying it as a primary growth sector, with special attention paid to the development of forestry related enterprises (NDP I, 2010; NDP II, 2015).

Uganda's forestry sector has multiple agencies in charge of administering and regulating the use of forestry products. The National Forestry and Tree Planting Act (2003) classified forests into five categories: central forest reserves, local forest reserves, community forest reserves, private forests, and forests under the wildlife conservation areas. The main regulatory body in the forestry sector is the National Forestry Authority (NFA), however the mandate of NFA is mainly the administration and regulation of the Central Forest Reserves (CFRs), with little role regarding private commercial forestry (National Forestry and Tree Planting Act, 2003). The Act mandates local governments (LGs) to oversee the local forestry reserves, as well as to provide oversight of private forests. Further, forestry, unlike the sugarcane sector, has a

national research institute – the National Forestry Research Institute (NAFORI) - which conducts research in order to improve seed varieties, amongst other issues.

4.2.3 Reforms in the regulatory regime

The rise of commercial forestry in Uganda is a new phenomenon, thus the current regulatory institutional framework is weak. This provides for a multiplicity of oversight agencies with varying economic interests overriding sector sustainability, security and growth (NFP, 2013). The results from this study have been presented to the commercial forestry sector players, including government representatives, outlining key reform areas. This study informed the sector players that specifically, the timber industry is characterised by: fraudulent weighing systems and measures; an absence of a grading system; the rampant collapse of civil works (especially buildings) partly related to timber quality; a lack of a clear policy on the licensing regime of mills and dealerships; an absence of a regulatory board for the compliance and enforcement of industry rules and regulations; no Forestry Development Fund (FDF) strategy for industry sustainability; a lack of price guiding systems to curb exploitative tendencies; and certification of inputs and traceability of logs remain a challenge. In stakeholder meetings[3] it was reported that the rise in the number of Chinese plywood mills had attracted illegal logging and/or resource poaching in private plantations due to the lack of a traceability (source of origin) system in the industry. These findings generated interventionist interest from both industry players and development partners' agencies, for example a letter[4] was written by UTGA to the Ministry of Water and Environment (MWE) requesting the formation of a task

[3] Stakeholder's symposiums, 30th April 2015, 13th August 2015 at City Royale Hotel, Bugolobi.

[4] Setting up a task force for establishment of a timber industry board, UTGA letter dated 22nd October 2015.

force to establish a timber industry regulatory board. Subsequently, the Worldwide Fund (WWF), a development partner agency, released the first batch of funds to UTGA to initiate consultations for the establishment of an industry regulatory agency. These efforts are also being complemented by the piloting initiative of the Forestry Stewardship Council (FSC) to certify small-scale growers in Uganda under cluster group certification schemes.

4.3 Overview of Uganda's sugar industry

The sugar industry is one of the oldest industries in the country, dating back to the early 1920s. The first sugar factory was the Sugar Corporation of Uganda Limited (SCOUL), which was established in 1924 by Nanji Kalidas Mehta, the founder of the Mehta Group of Companies, a Mumbai-based conglomerate with business interests spanning four continents, namely Asia, Africa, Europe and North America. The factory is located in central Uganda in Lugazi, which lies between Kampala, the capital city, and Jinja, a municipal council. The second sugar factory - Kakira Sugar Works Limited (KSWL) - was started in 1930 by Muljibhai Madhvani, an Indian-born Ugandan businessman, entrepreneur, industrialist and philanthropist. The factory is located in Eastern Uganda in Kakira, between the Jinja municipal council and the Iganga municipal council. The third sugar factory to be established was Kinyara Sugar Limited (KSL), which was established by the government in the late 1960s. The factory is located in mid-Western Uganda, in Kinyara in the Masindi District. The fourth little known sugar factory was built in the 1970s at Sango-bay Sugar Estates (SBEL) also of an Asian origin ownership. The factory is located in Central Uganda in the Rakai District, near the border with Tanzania.

According to the National Sugar Policy (2010), by the 1960s the sector's annual production was approximately 140,000 tonnes, of which 120,000 were for domestic consumption and

20,000 for export. However, production declined significantly during the 1970s, due to the expulsion of Asians by Idi Amin; the then President of Uganda. This resulted in the mismanagement and neglect of the estates and the sugar industry almost collapsed. After 1986, the three traditional industries steadily picked up following rehabilitation and divestiture programmes undertaken jointly by Government and the private sector. Currently, Kakira Sugar Works Limited is fully owned by the Madhvani Group of companies after paying off loans guaranteed by the government. SCOUL is owned by the government and the Mehta Group, with a ratio of 51:49 shareholdings as at August 2011, while Kinyara Sugar Limited was initially rehabilitated under Booker Tate's management, but after privatisation the Rai Group took over management with their current stock of 70 percent, while government maintains 30 percent.

Over the last 10 years, the sugar industry has expanded production by nearly 20% per annum, culminating in the production of 438,360 tonnes of sugar in 2014 (USMA, 2015). With an estimated population of 35 million people (UBOS, 2016), with per capita sugar consumption of 12 kgs per person per year (National Sugar Policy, 2010), this translates into 420,000 tonnes, thus making Uganda able to fully supply the domestic market with a surplus of 20,000 tonnes for the export market. The largest sugar producer is Kakira Sugar Works Limited which accounts for 41%, followed by Kinyara Sugar Limited at 27%, SCOUL at 17% and other mills producing 15% altogether. Uganda's sugar market industry can thus be described as having three big producers.

4.3.1 Global competitiveness and the value chain governance structure of the commercial sugarcane

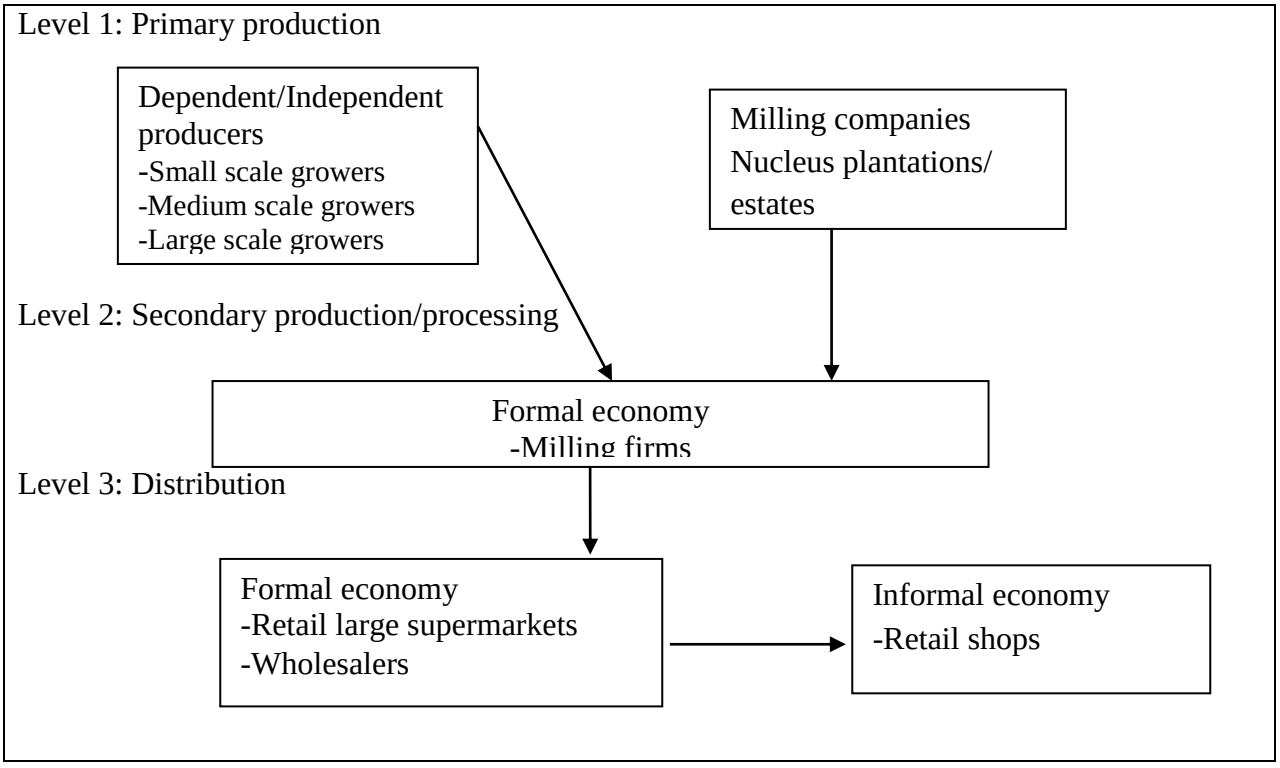
Sugar has a very rich history as a medium of exchange in the West Indies (Smith, 1776), and has also been regarded as the number 1 production commodity in the world (FAO, 2012)[5]. This makes sugar a competitive commodity in both local and international markets. Sugar is processed mainly from sugarcane and sugar beets, however in Uganda sugarcane is the raw material for sugar production. The competitiveness of Uganda's commercial sugarcane industry is anchored upon contracted out-grower schemes. The out-grower schemes are supported by sugar mills through market guarantees for the commodity and provision of inputs and extension services, especially for growers within a 35 kilometer radius of the mills. The out-grower schemes supply approximately 70% of the raw materials, while the remaining 30% is supplied by nucleus estates owned by the millers (USMA, 2015). Along with the tea industry, Uganda's sugarcane industry is one of the more traditional and well-organised value chains. The sugarcane industry operates mainly in the formal economy, with the big three producing mills accounting for approximately 85% of production and 15% by the other small new sugar mills (USMA, 2015). Primary production of the out-grower schemes is mainly characterized by small-scale growers owning one to three hectares, with little formal education. Commercial plantations (owning 25 ha and above) involving medium and large growers are a relatively new phenomenon which is still emerging.

Unlike forestry, where out-growers' clusters are mainly located far from the mills, in the sugarcane industry the existence of mainly contracted out-grower schemes is organised around a sugar mill and/or a number of sugar mills within relatively close proximity. This implies that

[5] www.faostat.fao.org/site/339/default.aspx

the sugarcane industry operates in a governance structure described as a captive value chain, with the out-growers' schemes having local cluster associations. Unlike the forestry industry which has a centralised National Association, the sugar cane industry lacks a centralised association for effective lobbying and advocacy. However, the sugar mills are organised under a national association known as the Uganda Sugar Manufacturers Association (USMA). Generally the sugar industry is organised as displayed in figure 4.3 below:

Figure 4.3: Showing the value chain governance structure: Uganda's Sugarcane industry



Source: Author

Level 1 Primary Production: involves contracted out-growers (registered supported out-growers and registered independent out-growers) and nucleus estates owned by milling companies.

Level 2 Secondary Production/Value Addition in the formal economy: all sugarcane is supplied to the sugar mills that produce mainly mill sugar, with other cane by-products such as molasses, bagasse for power co-generation, ethanol, and mud-fertiliser.

Level 3 Distribution: this includes retailers, large supermarkets and wholesalers operating in the formal economy which directly source from, or are supplied by, the millers. The retail shops mainly operate in the informal economy and source sugar from the large supermarkets and wholesalers.

Figure 4.3 above shows the general market governance structure of Uganda's sugar cane industry. The structure reveals an industry organised in the form of captive value chains, with the power asymmetry tilted in favour of the millers. According to Gereffi et al. (2005), captive value chains are characterised by low supplier/producer capabilities and dominant buyers. Gereffi et al. (2005) and Fredrick and Gereffi (2009) argued that in order for captive value chains to be efficient (i.e. competitive), there must be fair treatment of suppliers and equitable sharing of the market price, which makes exiting an unattractive option. The implication of the current value chain structure reveals that if there is no fair treatment and equitable revenue sharing, then the growers may have to consider undertaking a functional value chain upgrading strategy (investing in forward linkages such as milling plants). Yet this strategy faces a challenge with zoning policies (i.e. one mill per 25 kilometer radius), which creates barriers to entry for new mills (Uganda Sugar Policy, 2010). A possible option for growers is to undertake value chain process upgrading through strategies such as increased unit productivity, to enhance their business competitiveness.

However, as Uganda prepares to join the planned integration of the Tripartite Free Trade Area composed of EAC, COMESA and SADC (USMA, 2015), this will subject the Ugandan commercial sugarcane industry to intense competition, yet the sector does not enjoy a comparative advantage. This evidence of comparative advantage factors (see table 4.2 below) is analysed in light of competitiveness, through the global ranking of sugarcane producing countries in SADC in relation to Uganda.

Global competitiveness ranking

To contextualise this research, global rankings using data from the Southern African Development Community (SADC) set the scene in terms of country competition and competitiveness, as shown in Table 4.2 below. Uganda's commercial sugarcane industry faces a big challenge of becoming competitive not only in the country, but also globally. According to the global ranking of 108 sugar producing countries for 2013, Uganda was ranked number 38 in sugar production and number 41 in sugar yields per hectare (FAO STAT, 2013)[6].

Table 4.2: Sugarcane producing country data 2013; Uganda vs SADC.

Country	Global rank (production)	Global rank (yield/ha)	Yields/ha (tons)	*Adjusted yields/ha (tons 6-month production lead time)
South Africa	15	54	55.38	83.07
Swaziland	30	14	97.32	145.98
Zambia	34	7	102.56	153.84
Uganda	38	41	67.00	67.00
Malawi	42	6	107.40	161.10

Source: Fact fish based on FAO STAT Database
*Adjusted yields based on cane maturity obtained from country-specific industry reports[7] (SADC 9-12 months, Uganda 15-12 months). Production lead time factor is 1.5.

[6] Fact Fish Website: www.factfish.com/statistic/sugarcane

[7]Illovo Sugar (Malawi) Ltd Annual Report 2014, www.illovosugar.org; Uganda Sugar Cane Technologists' Association, 14th Annual Report Calendar Year 2014, www.ugandasugar.org

Table 4.2 shows that SADC sugar producing countries have a comparative advantage of early market production of 9-12 months, whereas Uganda requires 15-18 months (depending on whether the crop is a ratoon or plant cane). This translates into a market lead-time or lag-time of six months for Uganda. Cane maturity is a direct function of cane sucrose growth, which is influenced by weather conditions. While countries in the SADC region are achieving a growth rate of 1 TS/ha/month, Uganda realises only half that (Tyler, n.d.; USCTA, 2012). The extent to which the Ugandan sugar industry is not competitive can be highlighted by looking at the average yield per ha in the context of cane maturity. When looking at the average yield alone, it is easy to erroneously conclude that Uganda is doing well against South Africa, for example, at 67 t/ha and 55.38 t/ha respectively. However, in this globalised economic environment, the time to market is a key indicator of how competitive a country is against others, with the shorter time to market offering first-mover advantages. For this reason, South Africa is able to market its cane in nine months, while Uganda needs another six months. This means South Africa accumulates 83.07 tons in a similar period of 15-18 months, thus rendering Uganda uncompetitive. This implies that for Uganda's sugarcane industry to compete and achieve competitiveness in the proposed free trade area, the industry has to pursue a strategy of productivity gains to compensate for its longer lead time. This would entail introducing faster growing cane varieties to replace the poor and low yielding cane varieties (USMA, 2015).

4.3.2 Applicable regulatory regime and policies in the sugar industry sector

Uganda's sugar industry is regulated by the 'National Sugar Policy, a Framework for the enhancement of Competitiveness, Public-Private Partnership and Social Transformation', which was enacted in 2010. The policy overrides the outdated Uganda Sugar (Control) Act of 1938. The key guiding principles in the policy, among others, are: (1) Market forces shall

determine sugarcane as well as its products' prices; (2) Equitable distribution of productive enterprises nationally; (3) Equitable sharing of revenue from sugar and its by-products. Further, clause 4.2 (i) states that sugarcane growing areas shall be planned within a radius of 25 kilometers, and new sugar mills shall not be licensed within a 25 kilometer radius from an existing mill. Clause 2.2 states the cane pricing formula as follows:

> *"The cane pricing was originally based on the formula- CP = SP X 0.35 X R. Subsequently, there were disagreements and questions on rationality of this formula. The sugar cane associations have a contention on the percent share of the sugar price*."

Where

CP = implies cane price,

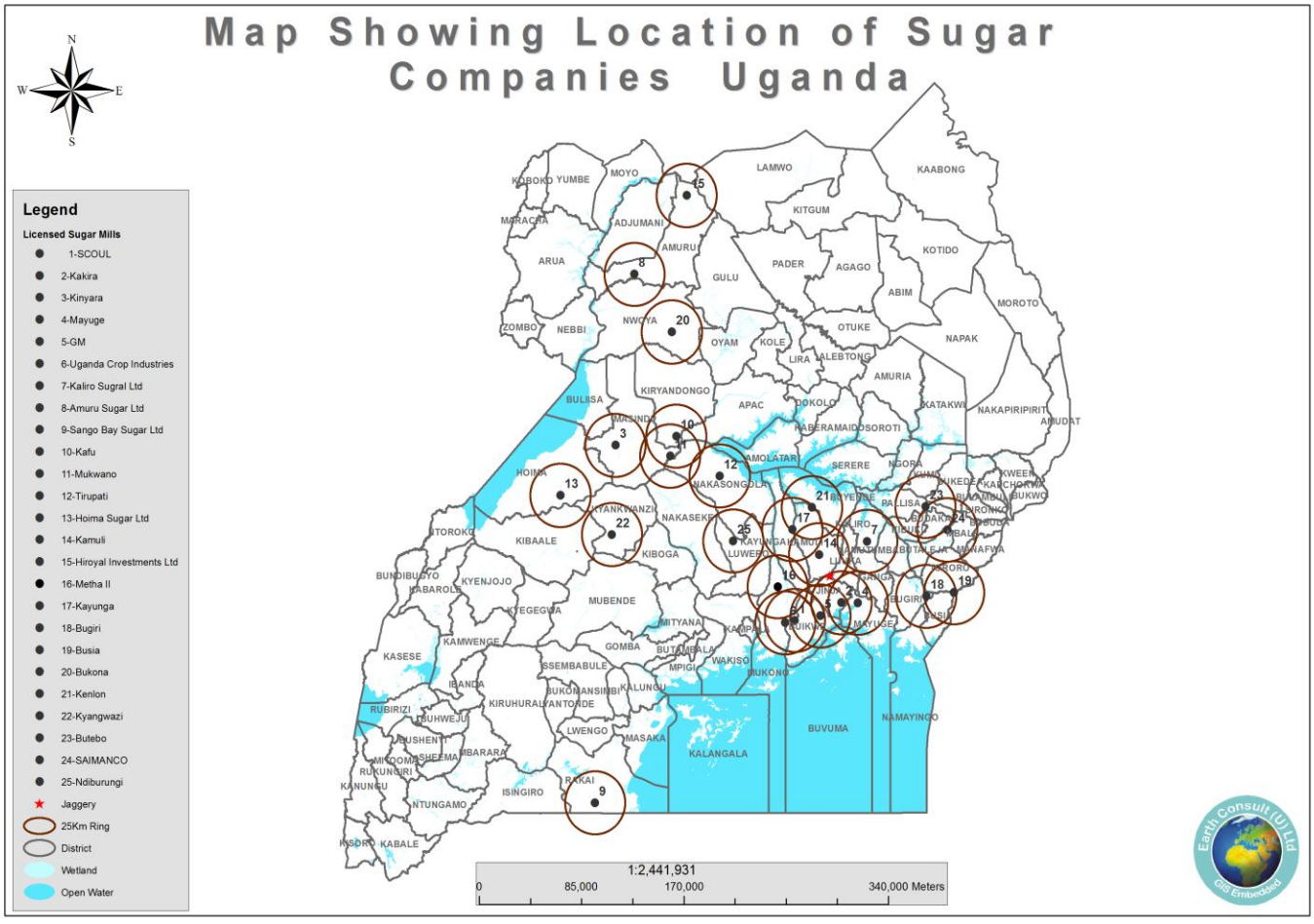
SP = implies average annual market sugar price per ton, 0.35 represents grower's share, and

R= means average annual rendement obtained by the processing mill, which is expressed as recovery of crystal sugar per ton of cane.

The Ministry of Trade, Industry and Co-operatives (MTIC) is the mandated regulatory agency. According to USCTA (2012) and USMA (2015), only two new sugar mills - G.M. Sugar and Mayuge Sugar Ltd - were established before the publication of the zoning policy. This implies that the probable number of licensed mills before publication of the policy were the big three - Sango-bay Sugar Estates Ltd and then G.M Sugar and Mayuge Sugar Ltd, all totaling six in number. Since the introduction of the zoning 'ring-fencing' policy in 2010, the number of applications for sugar mill licenses has increased dramatically, from 6 to 26, suggesting an

astronomical increment of more than 300% within five years (see Figure 4.4 below). Surprisingly, to-date less than 50% of the total licensed mills have been established. Further, most of the mills have been licensed in the Eastern Uganda region. In the mid-Western region (Masindi/Hoima/Kiryandongo Districts) the licenses were allocated to the same proprietor save one, which has not been established yet. This suggests that the zoning policy is being abused by curving out large areas of the country for monopolies.

Figure 4.4: Map showing the location of sugar companies in Uganda



Source: Ministry of Trade, Industry and Co-operatives (nd)

4.3.3: Reforms in the regulatory regime – Draft Uganda Sugar Act 2015

The big three milling companies have been putting pressure on the government to streamline the zoning policy into a law that can be enforced (USCTA, 2012; USMA, 2015). The biggest causalities of the weak enforcement of the zoning policy are the bigger two of the three, i.e. SCOUL which is located in the Central region and KSWL which is located in the Eastern region. The establishment of G.M. Sugar, Mayuge Sugar Ltd, Kaliro Sugar Ltd and Kamuli Sugar Ltd in close proximity to the big two has introduced stiff competition for the supply of cane as a raw material from out-growers. The competition has further eroded the profits previously enjoyed by the big two, as they now have to compete to offer growers better prices for their cane supply. The big two[8]also cite huge losses incurred due to the supply of immature cane contributing to low recovery, low yields and low power generation amounting to Ugx 191.85 billion, which is equivalent to USD[9]57 million. The other major factor necessitating the enactment of the law is cane pricing, especially for growers in the mid-Western region which supply KSL, which still enjoys a monopoly. The growers in the mid-Western region receive low prices for their cane (Ugx 78,500 per ton) compared to the Eastern region growers (Ugx 105,000 per ton), with a 25% price differential. This has caused animosity in the sugar industry, with the affected out-growers questioning the relevance of the zoning policy as evidenced by the petition letter[10] submitted to the President.

[8] USMA letter addressed to Hon. Minister MTIC dated March, 09 2016, Ref: USMA 01/16, hardcopy available with author

[9] 1 USD = 3,379 UGX exchange rates March 09, 2016 by Bank of Uganda. Available: https://www.bou.or.ug/bou/collateral/exchamge_rates.html

[10] Memorandum to the President by sugarcane farmers in Masindi dated 03rd August 2015 and 22nd January 2016

Therefore, crafting the Sugar Bill 2015 (currently named the Draft Sugar Act 2015) is meant to address the following issues: governance – by creating a regulatory board/council; property rights ownership – adhering to zoning for the establishment and expansion of sugar mills; and a fair cane pricing formula, which was cited as a contentious issue in the existing policy.

Governance: in the first Draft Bill of 16th March 2015, the bill proposed a Chairman, five government representatives, three miller representatives and two grower representatives. A meeting was held afterwards and it was agreed to reduce government representation by two and increase the growers' representation to balance with the millers' representation. Interestingly, the draft of 1st June 2015, which emerged after the meeting, shows that two vacant government positions were filled by millers, resulting in five millers and two growers. Further, all the members were to be appointed by the Minister after consultation with the relevant organisations.

Property rights ownership: the zoning 'ring-fencing' policy of one mill in a 25 kilometer radius was being maintained, implying that the location between two mills is 50 kilometers. Cane pricing formula: the bill proposed an increase in the sharing ratio for the growers from 35% in the current policy to 40%, based on milled sugar alone, i.e., without other by-products. Another important area addressed by the bill is the creation of a national sugarcane research institute. Currently research is only conducted by the big three.

4.4 Summary

Sugarcane and forestry are two of the organised agriculture sectors that provide jobs, food and energy to Uganda's economy, yet reforms in the sugarcane industry are vital to address the equitable distribution of wealth for industry competitiveness. Unfortunately the underhanded methods being employed by millers, in collusion with government officials, in the crafting of the sugar bill is causing industry tensions, as growers feel that their views are being sidelined. This was evidenced by the association growers' petition[11] to the Speaker of Parliament, which questioned the credibility of the consultative process in the development of the Sugar Bill. The need to undertake reforms that encourage inclusive growth is the way forward for the sustainable competitiveness of the sugar industry.

[11] Petition of the Uganda Sugar Bill 2015 formulation process, letter to Speaker of Parliament, dated 17th July 2015.

CHAPTER FIVE: VALUE CHAIN ENTERPRISE ANALYSIS

5.1 Introduction

This chapter presents the demographic and other characteristics of the study population and the enterprises participating in the two value chain sectors. It begins with the presentation and interpretation of the characteristics of the respondents of the study, after which the findings and interpretations are presented according to the research questions. This study specifically deals with the commercial sugar and forestry sectors, which in particular includes the primary producers, millers' representatives, association executives, development agency program specialists and opinion leaders.

5.2 Study geographical area

The study was conducted mainly in Mid-Western Uganda for the sugarcane value chain cluster. The cane growing area in Mid-Western Uganda covers approximately 40,000 hectares, which is comparable with the whole forestry growing area in the whole of Uganda. Therefore, all the forestry growing clusters in Uganda were covered by this study with a purpose of matching area scopes of both commercial sugarcane and forestry value chains.

5.3 Demographic characteristics

The researcher analyzed the various demographic characteristics of the respondents (descriptive statistics). The results are presented in Table 5.1 and Figures 5.1 to 5.7. Specifically, the study used cross tabulation together with bar charts to help visually explain the differences in the demographic characteristics of the respondents by the two sectors. The respondents' characteristics included the positions of the respondents, their level of education, the gender, firm ownership, period of firm establishment, form of land ownership, revenue generated and production capacities. These are presented and explained below in the various bar charts.

Table 5.1: Percentage distribution of respondents by demographics of the sample firms by sector

		Forestry	Sugarcane	Total
Gender	Male	87.0	90.6	88.5
	Female	13.0	9.4	11.5
Education	PhD Level	6.5	0.0	3.8
	Graduate (Masters and Degree)	63.0	40.6	53.8
	Professional Level	2.2	0.0	1.3
	Diploma Level	17.4	28.1	21.8
	Certificate level (course Certificate, Primary and Secondary levels	8.7	18.8	12.8
	No Response	2.2	12.5	6.4
Ownership	Owner (Director, Managing Director, Chairman, Owner)	71.7	93.8	80.8
	Manager (Supervisor, Employee, manager)	28.3	6.3	19.2
Form of ownership	Sole proprietorship or Unregistered	43.5	87.5	61.5
	Corporate Limited	41.3	3.1	25.6
	Partnership	13.0	0.0	7.7
	Not stated	2.2	9.4	5.1
Land tenure system	Private owned land	45.7	37.5	42.3
	Government or Public leased land	32.6	6.3	21.8
	Government or Public leased land and private leased or hired land	0.0	31.3	12.8
	Government or public leased land and private owned land	8.7	9.4	9.0
	Private leased or hired land	6.5	9.4	7.7
	Not stated	4.3	6.3	5.1
	Government or Public leased land, Private owned land and private leased or hired land	2.2	0.0	1.3
Revenue generated	Stated	8.7	46.9	24.4
	Not stated	91.3	53.1	75.6
Sector Performance	Low performers	34.8	40.6	37.2
	Medium performers	23.9	37.5	29.5
	High performers	41.3	21.9	33.3

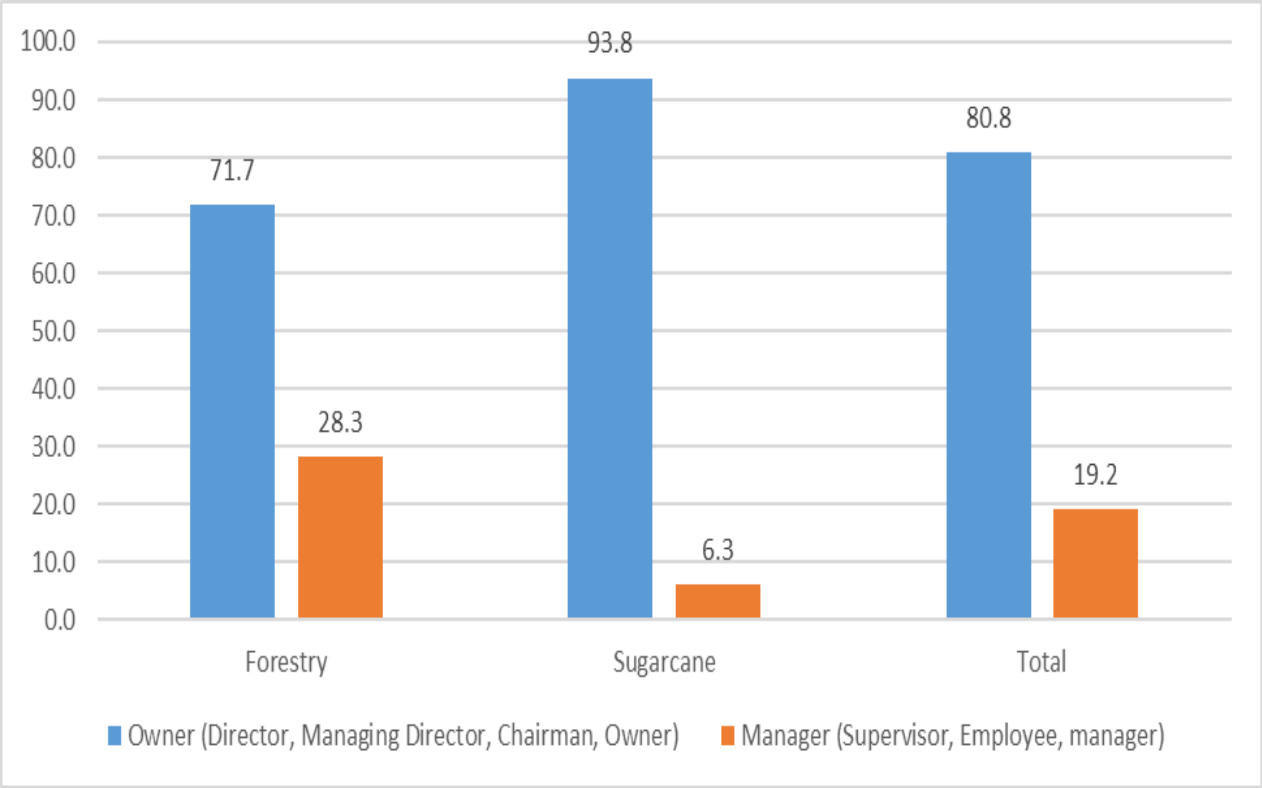
Table 5.1: Continued

		Forestry	Sugar	Total
	Before 1996	2.2	12.5	6.4
	1996 - 2001	15.2	31.3	21.8
	2002 – 2007	30.4	18.8	25.6
	2008 – 2012	39.1	21.9	32.1
	After 2012	6.5	0	3.8
Time firm started	Not Stated	6.5	15.6	10.3
FIRM MATURITY				
		LPEs	**MPEs**	**HPEs**
	Before 1996	10.3	8.7	0.0
	1996 - 2001	17.2	21.7	26.9
	2002 – 2007	31.0	26.1	19.2
	2008 – 2012	31.0	26.1	38.5
	After 2012	6.9	0.0	3.8
Time firm started	Not Stated	3.4	17.4	11.5

5.3.1 Positions of the respondents

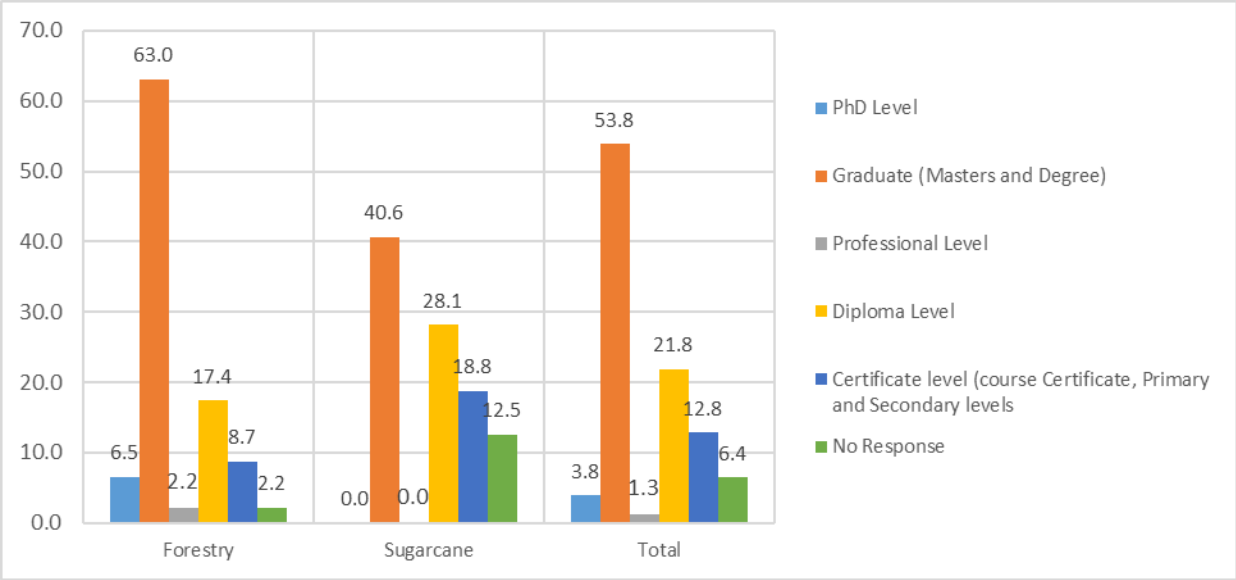
Figure 5.1 displays data on the respondents' positions in the firm. These results indicate that the majority of the respondents in both the sugar and forestry sectors were owners (80.8%) and while those who were managers accounted for just one in five. The sugarcane sector had more owners interviewed (93.7%) than the forestry sector (71.7%). This difference may be explained by the difference in the risk perception. The sugarcane cane almost requires daily supervision than the forestry sector and more risk especially during the dry season.

Figure 5.1: Percentage distribution of respondent by positions



5.3.2 Level of education of the respondents

Figure 5.2: Percentage distribution of respondents by level of education

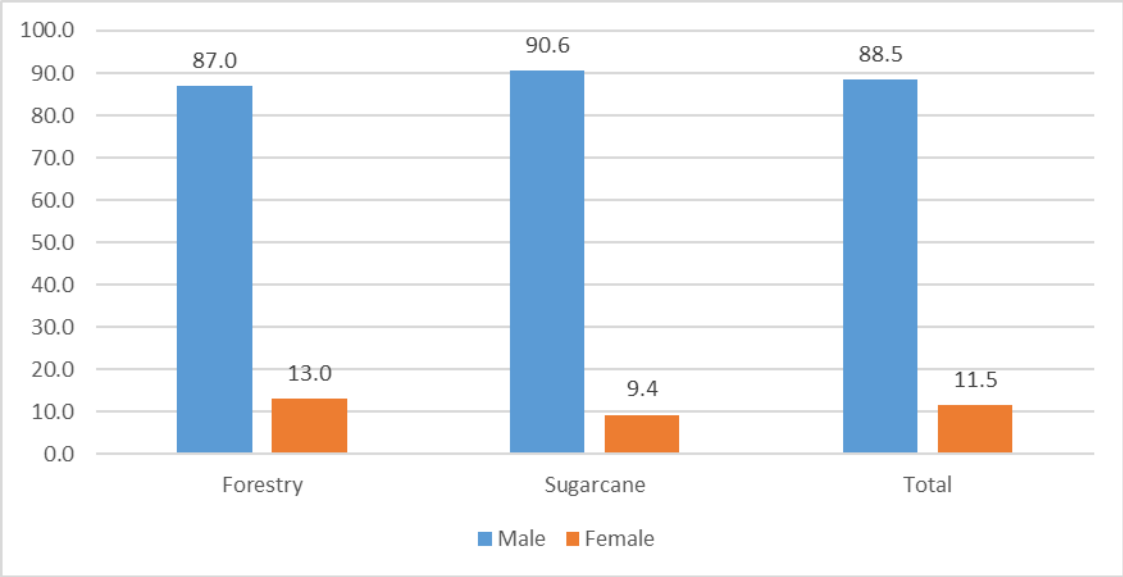


Its worthy noting in a country like Uganda were those with higher education, that is from ordinary diploma to PhD are less than 10 percent, those involved in the forestry and sugarcane sector by this study are highly educated. Overall 57.6% have at least one degree with 3.8% having PhD. The implication is that this is becoming a good business for which the skilled people are getting attracted. Their differences in education level by sector, for example whereas 6.5% of the respondents in the forestry sector had PhD, it was zero for the Sugarcane sector. Not indicated in this graph was that most of those who had the PhD, they had either done agriculture or forestry while in the sugarcane sector, there was no dominant profession. The bar chart above shows the level of education of the respondents in the study. In addition, in both sectors, those respondents who did not indicate any level of education were in the minority.

5.3.3 Gender of the respondents

Figure 5.3 shows the distribution of respondents by gender. The results seen in the chart indicate that in both sectors, the majority of the respondents were male. Overall, only about one in ten of the respondents were women. This is not surprising in that historically, women because of not owning land were not supposed to use it for long-term investment commercial crops like coffee, sugarcane and forestry that last for long time save for 'Matooke' banana plantations that provide food for home consumption and the surplus for market.

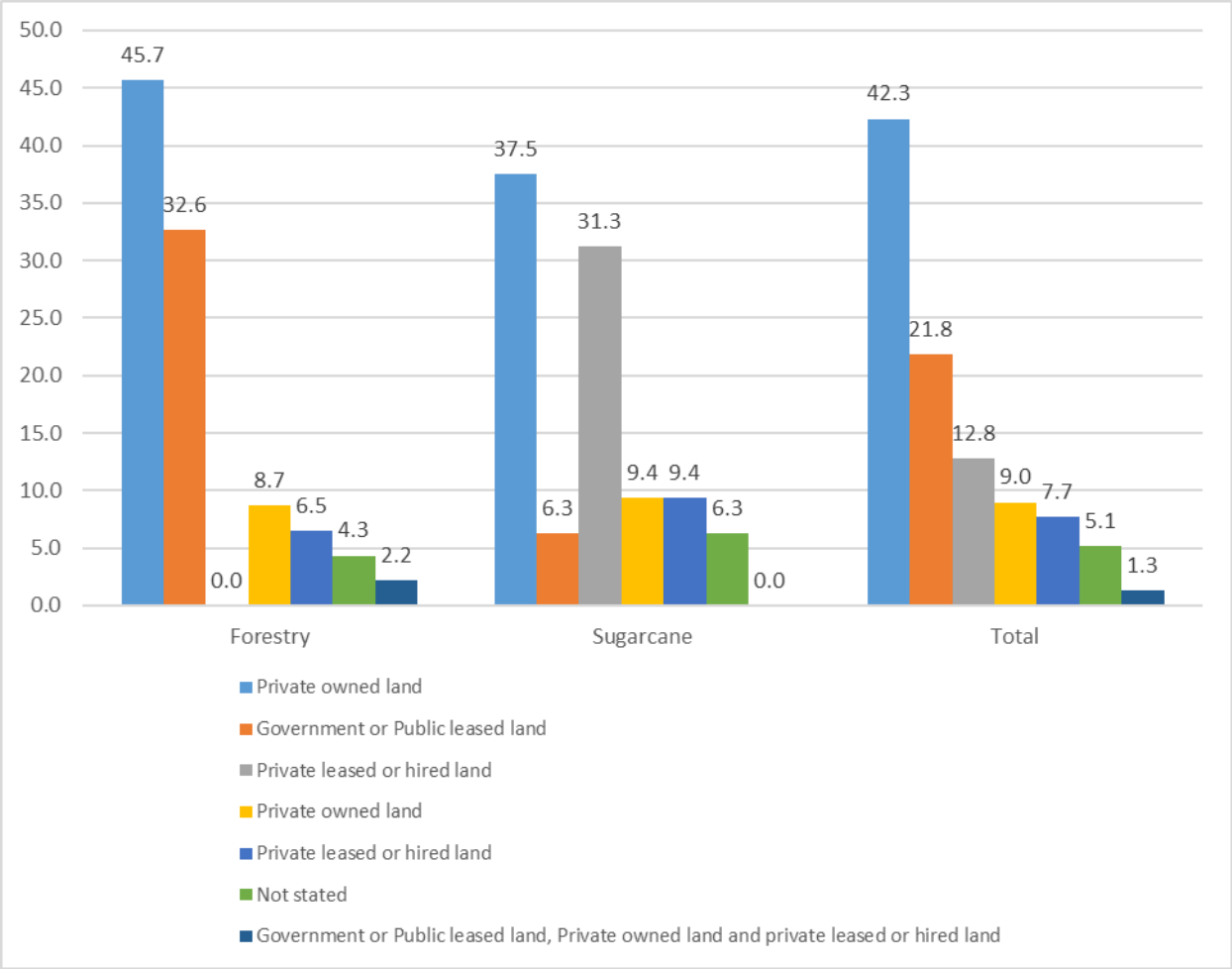
Figure 5.3: Percentage distribution of respondents by gender



5.3.4 Land ownership

There are major differences in land ownership by the two sectors. Whereas the majority of business were on privately owned land (42.3%/), when it came to public leased land this was the second highest form of ownership for the forestry sector. For the sugarcane sector, the second highest was the private leased or hired land. There was no forest on any private leased or hired land. This may be due to the fact that forestry takes a minimum of 7-10 years and no individual is willing to hire or lease out land to someone else for that long which is the case for the sugarcane sector as it takes an average of 15-18 months to mature and usually the land is leased for an average of 5 years. The results indicate that the majority of the respondents for both sectors privately own their land. This was followed by the respondents who lease public land.

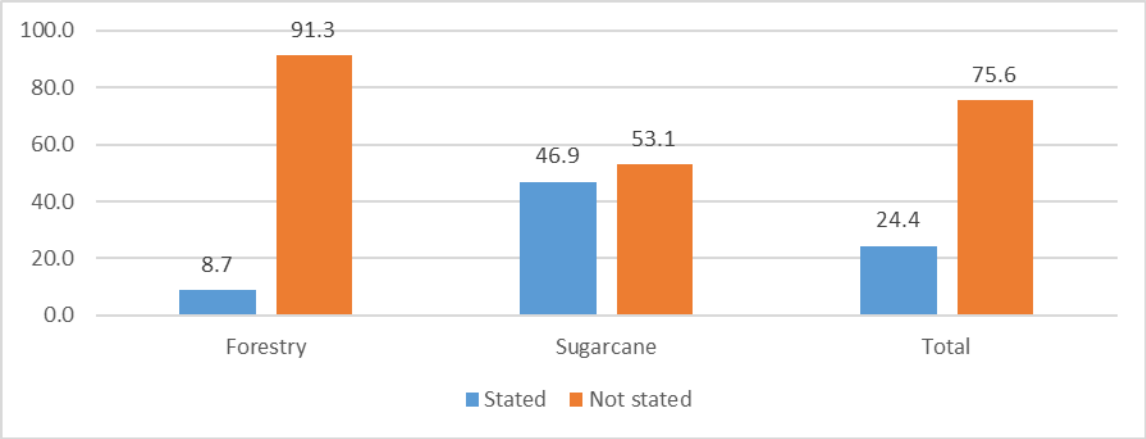
Figure 5.4: Percentage distribution of respondents by land ownerships



5.3.5 Revenue generated by the respondents

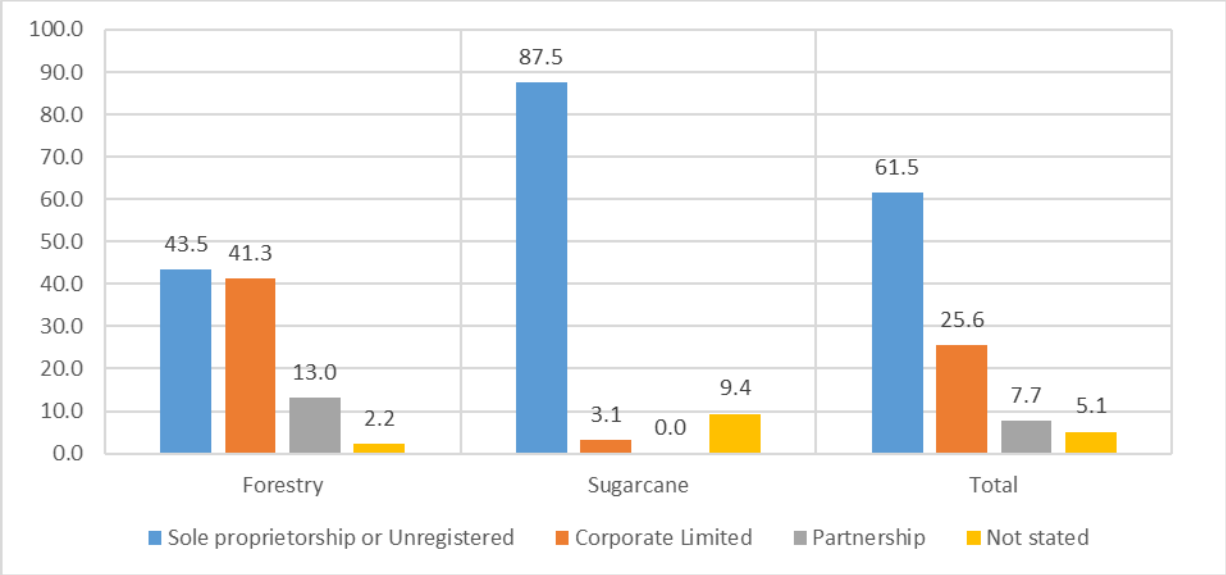
Figure 5.5 displays results of the respondents' willingness to provide their revenues. The results indicate that the majority of the respondents in both sectors were not willing to provide their revenues, however more respondents in the sugarcane sector were willing to state their revenues than the forestry sector.

Figure 5.5: Percentage distribution of respondents by shared revenue generated



5.3.6 Firm ownership

Figure 5.6: Percentage distribution of respondents by firm ownership

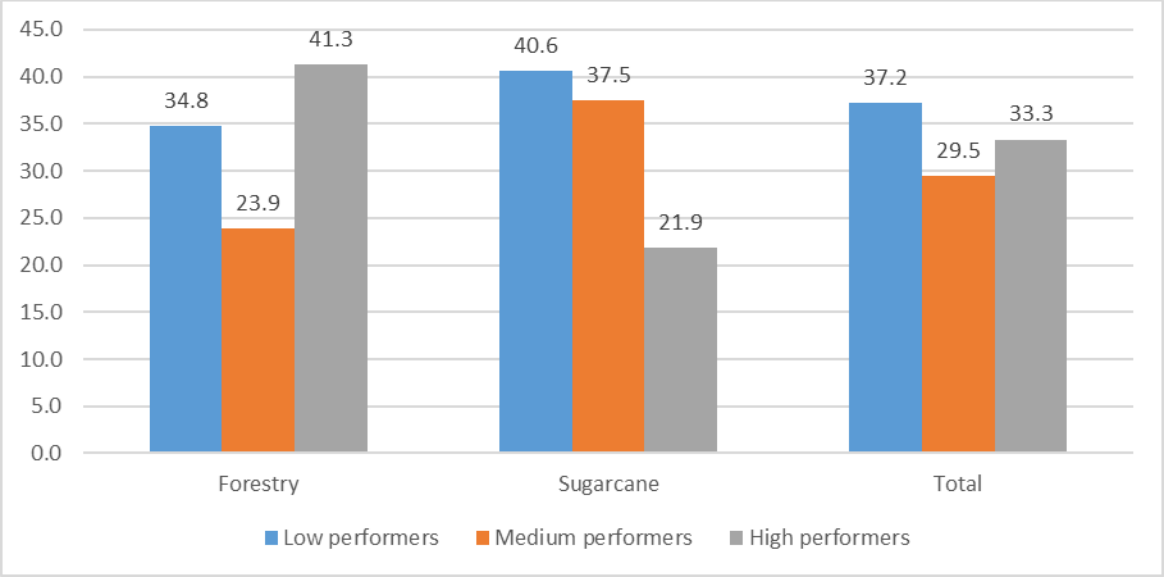


The results in Figure 5.6 indicate the ownership of the different respondents in the sugar and forestry sectors. The findings show that the majority of the respondents have firms that are sole proprietorships or are unregistered. However, looking at forestry alone, there were more

formalised businesses under the categories of partnership and corporates than the sugarcane sector, which had few corporate firms.

5.3.7.Industrial performance and productivity levels

Figure 5.7a: Percentage performance categories for the forestry and sugarcane sector



The results in figure 5.7 indicate performance categories with respect to achieving desired industry performance and/or productivity levels. The results indicate that 41.3 % of the respondents achieved industry performance levels in the forestry sector and only 21.9 % were able to do so in the sugarcane sector. Overall, in both sectors only 33.3 % were able to achieve desired industry performance levels.

Figure 5.7b: Percentage performance categories for the firm maturity

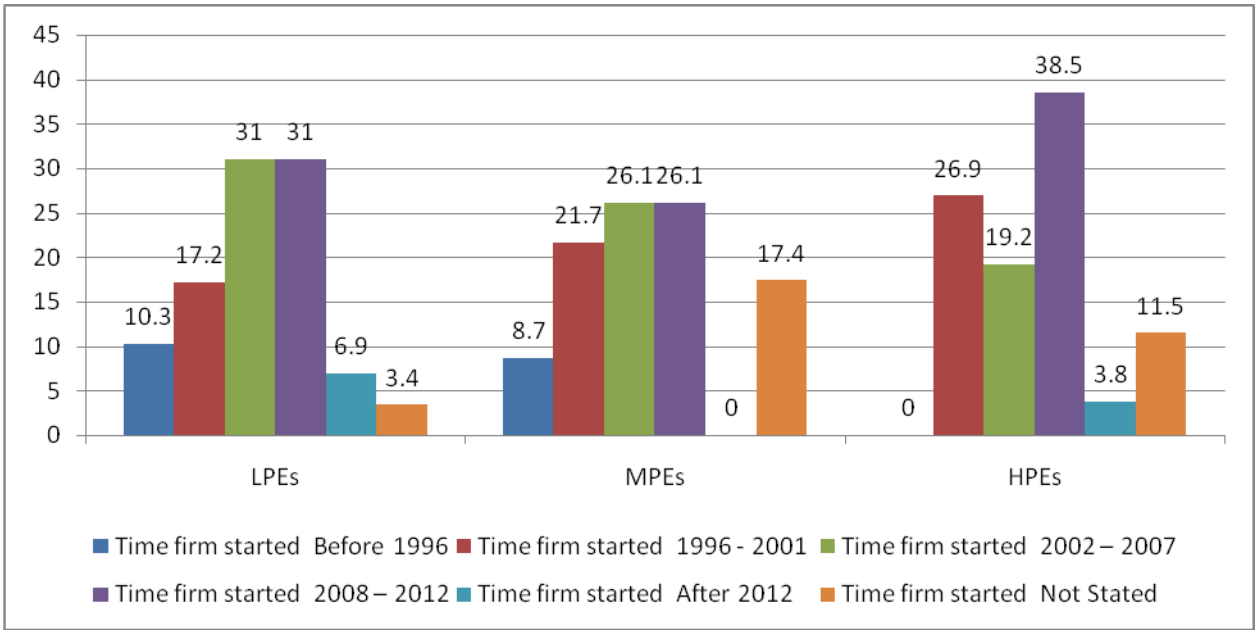


Figure 5.7b shows the distribution of the different performance categories and firm maturity. Irrespective of the performance category, the highest proportion of firms by maturity where those that started between 2008 – 2012 followed by those that started between 2002-2007. The implication for this finding that maturity does not explain business success in the context of this study.

5.4 Results of research themes at micro level VC enterprise comparative analysis

The results below indicate the within-case and cross-case analysis of performance categories in the two sectors of commercial sugarcane farming and forestry. The categories are classified as high performing entrepreneurs/enterprises, medium performing entrepreneurs/enterprises and low performing entrepreneurs/enterprises. The survey instrument had positive statements that respondents were required to respond to using a Likert scale ranging from not important (1) to very important (5), or not agree (1) to highly agree (5). The results are presented using quantitative data, however these were validated by qualitative data results where applicable. The results of the five sub-research themes are shown in Table 5.2 below:

Table 5.2: Within case and cross case analysis at enterprise level

		High Acceptance (%)				Low Acceptance (%)		
		LPE	**MPE**	**HPE**		**LPE**	**MPE**	**HPE**
VALUE CHAIN COMPETITIVENESS								
	KEY SUCCESS FACTORS							
	Supplier-entre traits	100	95.7	96.2		0	4.4	3.9
	Productivity indicators	100	91.3	92.3		0	8.7	7.7
	Financial indicators	96.6	95.7	96.2		3.5	4.4	3.9
	MILLERS' EXPECTATIONS							
	Productivity indicator	75.9	73.9	92.3		24.1	26.1	7.7
	Buyer exp prod-entre traits	51.7	43.5	50.0		48.3	56.5	50.0
DISTRIBUTION OF GAINS								
	FACTOR INPUTS							
	Factor inputs	24.1	39.1	38.5		75.9	60.9	61.5
	LOCATIONAL DIMENSIONS							
	Exploitative sharing/(Price formula)	37.9/(69)	21.7/(60.9)	30.7/(65.4)		62.0/(31)	78.3/(39.1)	69.2/(34.6)
	Equitable sharing	24.1	26.1	19.2		75.9	73.9	80.8
	VALUE ADDITION							
	Value addition	27.6	21.7	30.8		72.4	78.3	69.2
COMPARATIVE ADVANTAGES AND REGULATORY REGIME								
	PULL FACTORS							
	Grant incentives	37.9	13.0	30.8		62.1	87.0	69.2
	Ease of doing business	41.4	52.2	42.3		58.6	47.8	57.7
	Factor production endowment	44.8	65.2	57.7		55.2	34.8	42.3
	INVESTMENT CONSTRAINTS & OPPORTUNITIES							
	Generational strategy	41.4	65.2	65.4		58.6	34.8	34.6
	Functional VC upgrading	20.7	13.0	19.2		79.3	87.0	80.8

Table 5.2 continued

		High Acceptance (%)				Low Acceptance (%)		
		LPE	**MPE**	**HPE**		**LPE**	**MPE**	**HPE**
	Process VC upgrading	55.2	65.2	65.4		44.8	34.8	34.6
	Formalization strategy	34.5	21.7	26.9		65.5	78.3	73.1
	REGULATORY REGIME							
	Entry regulation	69.0	78.3	73.1		31.0	21.7	26.9
	Governance institutions	89.7	73.9	76.9		10.3	26.1	23.1
STANDARDS FOR MARKET ACCESS								
	Certification initiatives	27.6	26.1	26.9		72.4	73.9	73.1
	Production standards	58.6	43.5	57.7		41.4	56.5	42.3
	Pricing per grading system	27.6	39.1	42.3		72.4	60.9	57.7
COLLABORATION FOR PRODUCTION CAPABILITIES								
	STRENGTH OF VERTICAL LINKAGES							
	Vertical asset specificity	31.0	39.1	34.6		69.0	60.9	65.4
	Vertical transactional costs	20.7	13.0	0.0		79.3	87.0	100.0
	Vertical opportunism	27.6	34.8	34.6		72.4	65.2	65.4
	STRENGTH OF HORIZONTAL LINKAGES							
	Horizontal asset specificity	31.0	13.0	15.4		69.0	87.0	84.6
	Horizontal transactional costs	31.0	30.4	26.9		69.0	69.6	73.1
	Horizontal opportunism	55.2	47.8	34.6		44.8	52.2	65.4
	Technical and financial support	24.1	30.4	11.5		75.9	69.6	88.5

5.4.1 Sub-theme 1: Critical success factors (CSFs) for value chain competitiveness

Research question 1: **Why and how do perceptions of CSFs for competitiveness determine performance differences amongst high, medium and low producers and between VC sectors?**

Research question 2: **How are producers' competitiveness expectations compatible with market expectations amongst high, medium and low producers and between VC sectors?**

The results from Table 5.2 under the value chain competitiveness theme indicate that among the key success factors, supplier-entrepreneur traits, productivity practices and financial practices were generally regarded as being very important for business competitiveness. There were no significant differences in perceptions among the high, medium and low performing enterprises. The findings from the results show the following: supplier-entrepreneur traits LPEs (100%), MPEs (95.7%) and HPEs (96.2%), productivity practices LPEs (100%), MPEs (91.3%) and HPEs (92.3%), and financial practices LPEs (96.6%), MPEs (95.7%) and HPEs (96.2%).

With regards to producers meeting millers'/market expectations, the respondents' perceptions indicate that the productivity practices were highly agreed upon in all the performance categories. However, the high performers (92.3%) attached great importance to meeting market requirements compared to the medium (73.9%) and lower performers (75.9%). On the other hand, the perceptions of the buyer expectations of supplier entrepreneur traits were ranked average across all performance categories - HPEs (50.0%), MPEs (43.5%) and LPEs (51.7%).

To further explain the differences in the respondents' perceptions of value chain competitiveness, the researcher also ran the performance radar charts of the detailed key success factors and millers' expectations, the results of which are shown below in figures 5.8 and 5.9.

Figure 5.8: Ugandan producers' self-assessment perceptions of critical success factors for competitiveness

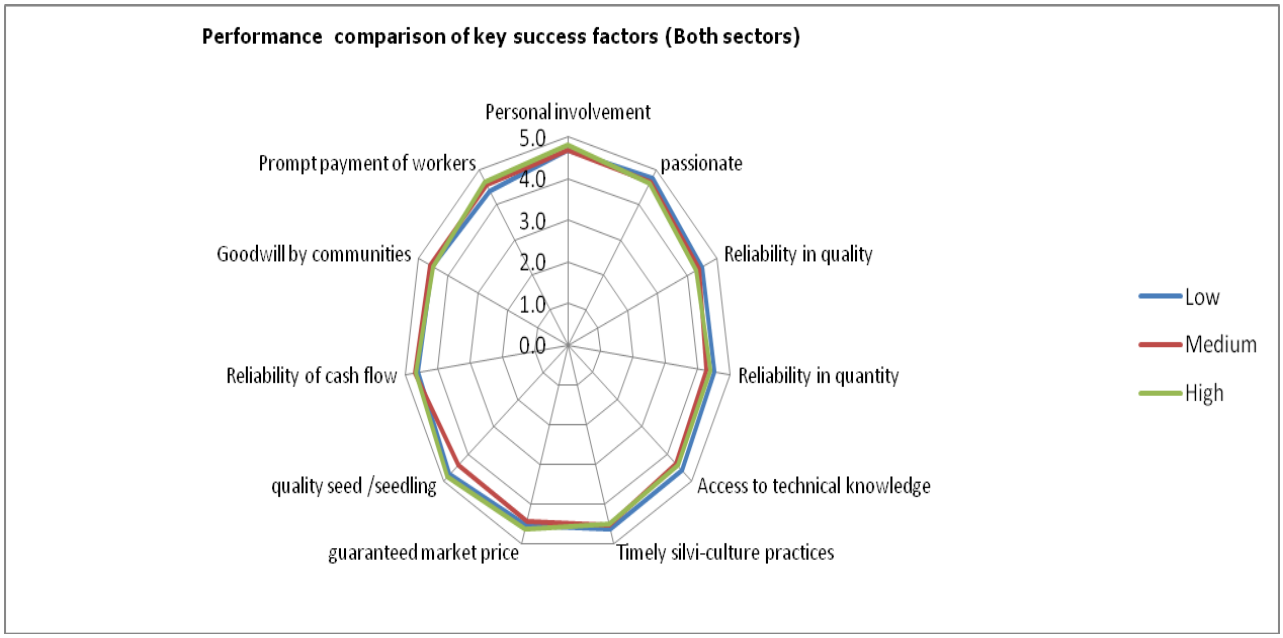


Figure 5.8 above indicates the detailed items of key success factors under the grouped constructs. These include supplier-entrepreneur traits (personal involvement, passionate, access to technical knowledge, timely silvi-culture practices and prompt payment of workers), productivity practices (reliability in quality, reliability in quantity, guaranteed market price and quality seeds) and financial practices (reliability of cash flow and goodwill by communities).

The results from the chart above show that there is generally a fit in the perceptions of respondents in all the performance categories with regard to the key success factors. This implied

that the respondents in all the three performance categories in this study had the same perceptions of the importance of key success factors for their business competitiveness.

Figure 5.9: Ugandan producers' self-assessment perceptions for meeting millers' expectations

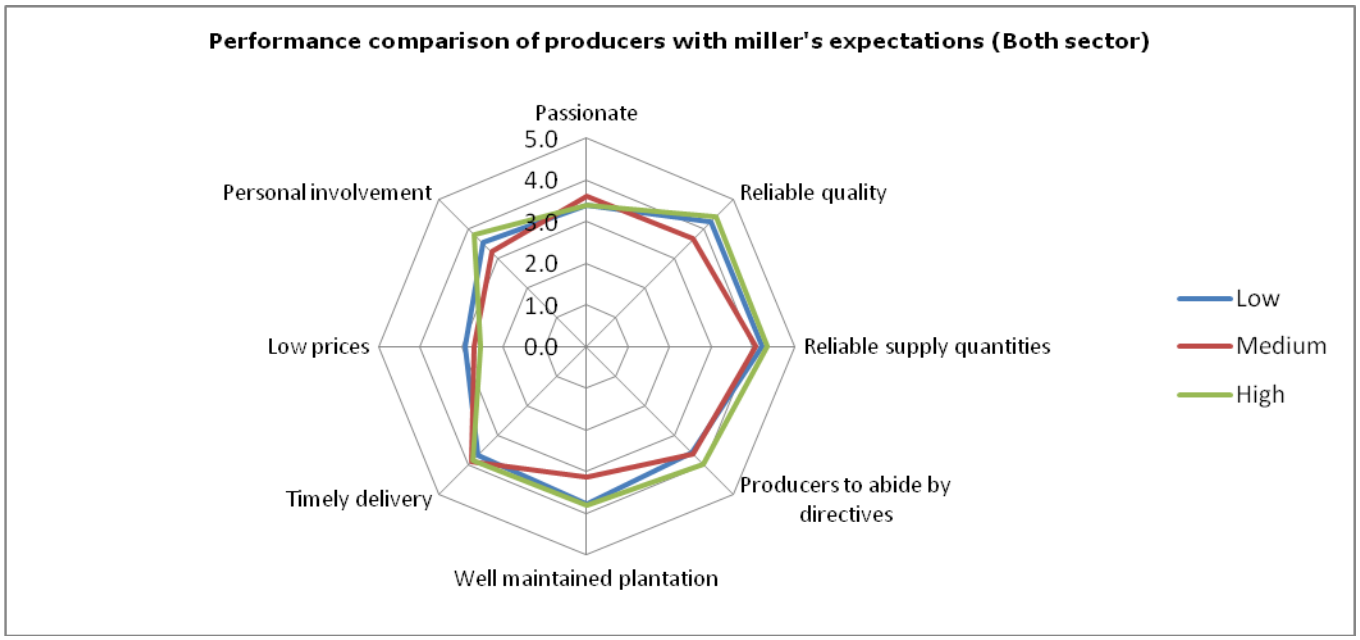


Figure 5.9 indicates the detailed items of millers' expectations from the perspective of the producers under the grouped constructs. These include productivity practices (reliable quality, reliable supply quantities, producers to abide by directives, well-maintained plantations and timely delivery) and buyers' expectations of producer-entrepreneur traits as being passionate and low priced with personal involvement in the business.

The results from figure 5.9 above show that there are deviations in the respondents' perceptions regarding meeting millers' expectations. Under the productivity practices, the high performers, unlike the medium and low performers, considered quality and abiding by the millers' directives as important factors in achieving their business competitiveness. Looking at the buyers'

expectations of producer-entrepreneurs' traits, the high performers responded well to the importance of being personally involved in their businesses to meet the millers' expectations.

Quantitative findings above generally revealed a fit in the perceptions of respondents among all the performance categories (HPEs, MPEs and LPEs) with regard to the three key success factors that is; supplier-entrepreneur traits (personal involvement, passionate, access to technical knowledge, timely silvi-culture practices and prompt payment of workers), productivity practices (reliability in quality, reliability in quantity, guaranteed market price and quality seeds) and financial practices (reliability of cash flow and goodwill by communities), as being important to their business competitiveness.

However, a nuanced view of the qualitative data revealed contrasting results between HPEs and both MPEs and LPEs. The results by HPEs revealed a consistency of findings in both quantitative and qualitative data stressed personality traits factors which are within their control as being key success factors for their business success, as evidenced in the quotation below:

> *"Commitment, love for the project, following advice from extension staff, co-operation with extension staff, politeness to extension staff, prompt payment of workers, friendliness with workers for good work output, good site selection, timely weeding and timely application of fertilisers"* (Respondent HPE 1 Sugar).

This finding was also validated with observable field productivity findings as evidenced in figures 5.10 and 5.11 below.

Figure 5.*10:* **Ugandan productivity practices (straight trees without weeds competition) of *growing forestry field by high performing entrepreneurs***

Figure 5.11: Ugandan productivity practices (healthy crop without weeds competition) of growing cane field by high performing entrepreneurs

The personal involvement of HPEs in their businesses was evidenced by residential built site houses in Figures 5.12 and 5.13 below, enabled them to closely monitor their businesses and thus attain better productivity observed in Figures 5.10 and 5.11 above.

Figure 5.12: A Ugandan residential site house depicting personal involvement behaviour by high performing entrepreneurs in the forestry business

Figure 5.13: A Ugandan residential site house depicting personal involvement behaviour by high performing entrepreneurs in the cane business

On the other hand, the low and medium performers generally stressed environmental related factors which were beyond their control as a source of their business success, as per quotations below:

> *Public relations with the miller, recently with good performance, I was allocated a new tractor by miller on loan. Harvest quickly attended to when submits request to miller; prompt payment; prompt service delivery, e.g. plough, seed delivery, road maintenance. (respondent MPE 1).*

> "*Availability of land, availability of market, availability of machinery, distance to market, availability of labour, security of crop/investment (e.g. against fire) and proper management"* (Respondent LPE 2 sugar).

Evidence of quantitative of findings for MPEs and LPEs was found to be in contrast with qualitative who were found not to have any residential site houses, implying minimum personal involvement in their respective businesses, possibly contributing to the low observed field productivity validated in Figures 5.14 and 5.15 below:

Figure 5.14: Ugandan productivity practices (crooked trees with weeds competition) of growing forestry field by low performing entrepreneurs

Figure 5.15: Ugandan productivity practices (unhealthy crop with weeds competition) of growing sugarcane field by low performing entrepreneurs

This section analyzed critical success factors for value chain competitiveness and alignment of producer expectations with market expectations in explaining enterprise performance differences and similarities amongst HPEs, MPEs and LPEs. Findings of the study revealed that:

HPEs attributed their business success to internal environmental factors such as personal involvement, passion, and commitment; factors that are within own control, thus contributing to high productivity gains. On the other hand, MPEs and LPEs attributed their business success to external environmental factors such as quick response by miller, good roads; factors that are outside own control, thus contributing to low fields productivity.

The HPEs were more responsive in meeting market requirements compared to both MPEs and LPEs. This finding strengthened the above finding on perceptions of internal environmental factors as being source of business success and achieving desired productivity gains. The next section presents equitable value chain sharing or distribution of gains between millers and growers.

5.4.2 Sub-theme 2: Equitable value chain sharing (miller – producer)

Research question 3: **How is equitable value chain sharing of proceeds perceived as a challenge for competitive success amongst VC participants and between VC sectors, thus creating winners and losers?**

The results from Table 5.2 indicated that on the theme of distribution of gains, the cost of factor inputs for production were perceived to be less of a challenge to their business competitiveness as they were scored below average by LPEs (24.1%), MPEs and HPEs (39.1%

and 38.5%). Regarding the sharing of revenues between millers and producers, the results revealed that exploitative tendencies were perceived by respondents not being much of a challenge to competitiveness of the value chain. However, considering only price as a sub-component of exploitative tendencies, exploitation turned out to be a major challenge to value chain competitiveness among the HPEs (30.7/(65.4)), MPEs (21.7/(60.9)) and LPEs (37.9/(69)). Similarly, the perceptions of the respondents regarding the revenue sharing between millers and growers were generally perceived to be inequitable as indicated by the HPEs (80.8%), MPEs (73.9 %) and LPEs (75.9%). These results were also confirmed by low acceptance in sharing of value chain by-products and inefficient plant mills by the HPEs (69.2 %), MPEs (78.3%) and LPEs (72.4%). This implied that farmers perceived the sugar milling machines to be inefficient in extracting sucrose from sugarcane supplied to produce sugar, i.e., sugar is a key product where both millers and growers share a percentage of proceeds based on an agreed formula. Therefore high extraction of sugar implies more revenue and less extraction of sugar less revenue for both parties. Further, the farmers perceived that the millers appropriated the benefits from the value addition sugarcane by-products such as molasses, bagasse for power co-generation and mud-fertilizer.

The results from the qualitative analysis are in tandem with the quantitative results which indicated a major challenge in the distribution of gains between the millers and producers, as evidenced in the quotation

> "*The miller pays a price based on market sugar price as determined by the formula. The formula does not cater for the by-products such as molasses, bagasse for power production (which generates revenue for the miller) and mud-fertiliser which millers*

apply as a fertiliser for the improvement of quality cane of the miller's estate farms" (Respondent HPE 1 Sugar).

"Millers set the price in the market" (All respondents in both sectors).

"Miller … is the one harvesting the plantation, they process roofing tiles, poles and ply wood; because we are private individuals, how do you tell if he (producer) is getting value for money in his investments? Therefore, price determination will be the millers… of this world, unless we cooperate and speak with one voice" (Respondent HPE 1 Forestry).

The analysis is this section provides the understanding of the enterprise performance differences and similarities as a result of perceptions regarding challenges associated with equitable value sharing between millers and growers. Findings of this study indicated that all respondents HPEs, MPEs and LPEs perceived unfair distribution of gains between millers and growers. Therefore, distribution of gains implication does not offer plausible explanations for performance differences between successful firms and unsuccessful firms, suggesting that it is an external environmental factor impacting all participating entrepreneur's businesses in the value chains. The next section presents results of perceptions on entrepreneurial alertness for business start-ups and growth and regulatory regime.

5.4.3 Sub-theme 3: Entrepreneurial alertness and regulatory regime

Research question 4: **How does entrepreneurial alertness explain enterprise and VC sector performance differences, with possibilities for the shaping and re-shaping of governance structures?**

Research question 5: **How does institutional quality explain the emergence of productive, unproductive and/or predatory behaviours reflected in the competitive success or failure of enterprises and VC sectors?**

From Table 5.2, the results indicate that the pull factors associated with entrepreneurial alertness for business start-ups and growth were factor production endowment, followed by ease of doing business and lastly grant incentives. For factor production endowment the HPEs and MPEs scored slightly above average (57.7% and 65.2%) than the LPEs, who scored it below average (44.8%). With regards to ease of doing business, the MPEs scored this averagely (52.2%) compared to the LPEs and HPEs, who scored it slightly below average at 41.4% and 42.3% respectively. However, grant incentives were not highly regarded as pull factors for business investments in this study. All the respondents in the three performance categories scored it below average - HPEs (30.8%), MPEs (13%) and LPEs (37.9%).

The results further (Table 5.2) also revealed that under the heading of investment constraints and opportunities, the leading investment opportunity was process VC upgrading such as investing in farm machinery and increasing yields per unit area, followed by generational strategy such as having in place a succession plan. However, functional VC upgrading, such as investing in value-addition plants and formalisation strategies such as formalizing business registration were generally considered to be investment constraints.

Process VC upgrading was highly considered to be an investment opportunity by the HPEs (65.4%), MPEs (65.2%) and LPEs (55.2%). This implied that the HPEs and MPEs slightly anticipated investing in process VC upgrading as an opportunity compared to LPEs. A generational strategy, which is synonymous with business succession, was likely to be pursued as an investment opportunity for business sustainability by HPEs (65.4%) and MPEs (65.2%), rather than LPEs (41.4%) who still viewed it as a constraint to their businesses. The qualitative finding validated the quantitative finding above suggesting that succession planning was a priority for HPEs and MPEs but not a priority for LPEs, as per quotations below:

> *"I have it as a dream, today I see myself 'eating' two rotations. I have only two kids (girl 13 years and boy 9 years), I bring them to the plantation, thinking they would pick interest, though they complain of dry weather etc. I want my kids to be successful, but hope that one of them will recognise the value of land. For instance, the boy planted part of a line of trees and once it is time for harvest he will receive all the proceeds so that he realises the sweetness of the land. I plan to make a will and put a caveat forbidding sale or subdivision of the land for the next 200 years, and within that time period the gene can rise up and rejuvenate the business. Our culture is different from the Indians/Asians who have generational business succession"* (Respondent HPE 1 Forestry).

With respect to cultural differences in this quote, the respondent is trying to imply that the African way of managing businesses is characterized with low participation of children and/or spouses who could be mentored to take-over once the founder member has departed to be with his/her creator. In contrast, the Indians/Asians business management culture so far observed reveals the involvement of family members i.e., children from an early stage and spouse who are mentored to take-over the business and thus business continuity.

"I plan to register my business formally, after registration I will encourage few shareholders from outside family so that I stop the children from selling the business in future" (Respondent HPE1 Sugar).

"Currently am a registered investor by UIA, we have family members as directors, we hope in future to opt outside knowledgeable people with expertise in value addition either as partners or directors to advance the business" (Respondent MPE 1 Forestry).

"The plan is clearly documented and put in the agreement that was submitted to SPGS to access the production cost share grant, but in reality implementation of the succession plan is at ground zero" (Respondent LPE1 Forestry)

Investment in functional VC upgrading was considered to be a major constraint by all the respondents, with HPEs at 80.8%, MPEs at 87.0% and LPEs at 79.3%. This implied that the VC primary producers were unable to capture higher rents emanating from processing/milling activities in the value chain, which may keep them being exploited by the millers.

In addition, the respondents in the three performance categories, viewed formalisation strategies as a constraint and scored it as follows, HPEs (73.1%), MPEs (78.3-%) and LPEs (65.5%),. The implication here was that most of these businesses did not consider registering their businesses as an important strategy for possible transition from the informal to the formal economy. This finding was validated by the quotation below:

"I could not formalize the business because taxation issues would eat investment capital at the start" (Respondent HPE1 Sugar).

Under the current regulatory regime, the existence of sound quality institutions (e.g. regulatory agencies) was perceived to be necessary for promoting productive entrepreneurial behaviours and/or deterring predatory entrepreneurial behaviours. The LPEs scored it higher (89.7%) than both the HPEs (76.9%) and the MPEs (73.9%). In addition, the creation of an enabling investment climate, such as the removal of ring fencing policies for millers to operate single-handedly in a cluster and policies guaranteeing property rights ownership, was generally regarded as being important for promoting fair trade practices in the industry. All the performance categories ranked it highly above average as follows: HPEs (73.1%), MPEs (78.3%) and LPEs (69.0%). The implication of these results is that the VC producers were agitating for establishment of a sound and strong regulatory regime by the government. This finding contradicts the liberalisation architects' school of thought that markets are self-regulating.

The findings in this section have been able to examine and explain enterprise performance differences and similarities associated with entrepreneurial alertness such as pull-factors and/or motivating factors for business start-ups and growth and identification of investment opportunities and constraints that may possibilities for shaping and re-shaping enterprise participation in the value chains. The findings of study were as follows:

Findings of the study revealed that pull-factors and/or motivating factors for business start-up and growth such as factor production endowments, ease of doing business and grant incentives

did not explain performance differences between successful and unsuccessful entrepreneur's businesses. This finding suggests that most entrepreneurs' posses entrepreneurial alertness instincts with respect to availability of favorable environmental factors enabling business start-ups and growth. Further, perceptions regarding identification investment opportunities and constraints such as process VC upgrading, generation strategy, functional VC upgrading and business formalization strategy that may shape and re-shape the value chains, findings revealed as follows:

- Process VC upgrading such as investing in farm machinery and increasing yields per unit area, was generally considered to be an investment opportunity by the HPEs, MPEs and LPEs.
- Generational strategy such as having in place a succession plan was perceived as an investment opportunity by HPEs and MPEs while LPEs considered it as an investment constraint.
- Functional VC upgrading, such as investing in value-addition plants was perceived as an investment constraint by HPEs, MPEs and LPEs. This finding suggested that most of these businesses could not capture higher rents associated with value adding activities.
- Business formalization such as business registration was generally considered to be an investment constraint by HPEs, MPEs and LPEs. Taxation was identified as the main factor hindering the process of entrepreneurial businesses to graduate from the informal to the formal economy.

A finding regarding perception on institutional quality in explaining enterprise performance differences, the results is that generally all VC producers were agitating for establishment of a sound and strong regulatory regime by the government. This finding contradicts the liberalisation

architects' school of thought that markets are self-regulating. The next section presents perceptions of compliance with standards for market access.

5.4.4 Sub-theme 4: Compliance with standards for market access

Research question 6: **How do perceptions of compliance with standards for market access explain performance differences amongst high, medium and low producers and between VC sectors?**

Table 5.2 above indicates the results for compliance to standards for market access. Here there were positive statements that respondents were required to respond to using a Likert scale ranging from not agree (1) to highly agree (5). The results from table 5.2 indicate compliance with standards for market access, which is composed of application of certification initiatives, access to production standards, and use of a pricing per grading system. Compliance with the application of certification initiatives and the use of pricing per grading system were perceived as major challenges in comparison to the availability of production standards in the value chains. The results revealed low application of certification initiatives and there were no major differences in perception rankings between the LPEs (72.4%), MPEs (73.9%) and HPEs (73.1%). In addition, the results from the use of a pricing per grading system shows a similar pattern, whereby the LPEs scored 72.4%, the MPEs scored 60.9% and the HPEs scored 57.7%. Regarding compliance with access to production standards, there was a moderate level of acceptance by LPEs (58.6%) and HPEs (57.7%), save for the MPEs (43.5%), who scored slightly below average.

The findings imply that there was some level of acceptable compliance with access to production standards among all performance categories that is HPEs, MPEs and LPEs while compliance with the application of certification initiatives and the use of pricing per grading system among the performance categories were generally perceived as major challenges in the value chains. The qualitative findings below renders support to quantitative findings above suggesting that generally a pricing per grading system posed challenges for productivity gains.

> *"the miller is applying uniform/average rendement whereby the good farmers are not reaping good pay from their efforts. In addition, the miller is also losing by applying this uniformity*" (Respondent HPE1 Sugar).

> *"Price is determined by the miller. There is no grading system"* (Respondent LPE 1 Sugar).

This section has been able to reveal performance differences and similarities amongst HPEs, MPEs and LPEs associated with perceptions on compliance with standards for market access for participating in value chains. The findings of the study revealed that there was a general acceptance of access to production standards by HPEs, MPEs and LPEs. This finding implied that information regarding production standards was accessible to all business enterprises and therefore it does not explain performance differences amongst successful and unsuccessful enterprises. Further, findings indicated that industry failure to apply a pricing per grading system and implementation of certification initiatives were perceived as major challenges for all business enterprises participating in the value chains. The next section presents results of vertical and horizontal collaboration for building supplier production capabilities in order to enhance enterprise competitiveness in value chains.

5.4.5 Sub-theme 5: Vertical and horizontal collaboration for the diffusion of supplier production capabilities

Research Question 7: **How does vertical and horizontal collaboration for the diffusion of supplier production capabilities explain the performance differences amongst VC participants and between VC sectors?**

The results from Table 5.2 above indicated vertical and horizontal collaboration for building suppliers/grower production capabilities. The strength of vertical and horizontal linkages were explained by investment asset specificity, vulnerability of transactional costs and opportunistic behavior vulnerability. Technical and financial support by development agencies was also included in the assessment of the strength of horizontal linkages.

5.4.5.1 Vertical collaboration

The results under the strength of the vertical linkages show that asset specificity measured in terms of investments in inputs support, knowledge and skills transfer from millers to suppliers/growers in the business was perceived as not being significant for their business competitiveness. The results revealed low acceptance among all performance categories and there was no significant difference in the perceptions between HPEs (65.4%), MPEs (60.9%) and LPEs (69.0%). This finding was validated by qualitative data findings suggesting low transfer of knowledge, skills and inputs support from millers directly to growers as per the quotations below:

> *"Under the previous miller, harvesting, loading and transporting were done by the farmers' company – which was the business arm of the association. When current*

management came on board, this was abolished and they preferred to use contractors. With the previous miller knowledge was gained; we used to have courses in Kampala which was helpful, however, with the current miller not much has been gained" (Respondent HPE 2 Sugar).

"*Lessons were learnt the hard way; the buyer rejected first thinning products by approx. 60 percent, second thinning products by approx. 10 percent. The reasons for rejection were over crooked 'not straight', tiny or small, i.e. below preferred diameter, broken and below required length especially 'fox tail' trees. As a result we have improved by proper maintenance of plantation when still young, spot slashing to minimise climbers, i.e. this reduces crookedness, timely beating-up to reduce the tiny trees, and timely weeding to reduce stunted growth*" (Respondent MPE 2 forestry).

Regarding vulnerability to transactional costs, the findings from table 5.1 show similar low acceptance levels of transactional costs across the board, with minor deviances for HPEs who considered them as negligible for their business competitiveness. The ratings were HPEs (100%), MPEs (87.0%), and LPEs (79.3%). In addition, the findings regarding vulnerability to opportunism show that there were no significant difference in the perceptions between HPEs (65.4%), MPEs (65.2%) and LPEs (72.4%), thus suggesting low levels opportunistic behaviors in vertical linkages. These findings were confirmed by the statement in the quotation below:

"Trust exists, though there are demerits but the merits outweigh the demerits"

(Respondent HPE 1 Sugar).

The statement by the respondent implies that although the relationship between growers and millers has a number of observed disadvantages, the growers are willing to down play the disadvantages and focus on the advantages enjoyed in the commercial relationships.

5.4.5.2 Horizontal collaboration

The results under the strength of the horizontal linkages revealed no differences in perception and low acceptance levels that asset investments specificity such as inputs support, skills and knowledge transfer, translated into building production capabilities, as evidenced with following scores HPEs (84.6%), MPEs (87.0%) and LPEs (69.0%). In addition, the results also indicated existence of low transactional costs across the board - LPEs (69.0%), MPEs (69.6%) and HPEs (73.1%). Furthermore, the findings regarding vulnerability to opportunism results show that there was no significant difference in the perceptions between LPEs (55.2%) and MPEs (47.8%), which were on average and higher than the HPEs (34.6%). This finding implied that the LPEs and MPEs experienced some level of opportunistic behaviors in their business dealings compared to the HPEs, as validated by qualitative data findings in the quotations below:

> "*Not optimal, participation in UTGA affairs is at low levels. For instance, out of the approximately 500 investors in forestry, only 60-70 investors are active with UTGA affairs*" (Respondent LPE 1 Forestry).
>
> "*The level of trust is not strong among the farmers. The association has some divisions because some farmers are close to the millers, thus being favoured and this creates suspicion"* (Respondent LPE 1 Sugar).

The above statements confirmed low levels of trust and/or poor quality relationships suggesting opportunistic behaviors in business dealings among LPEs and MPEs as evidenced with the

quantitative findings. On the other hand, the statements below confirmed perceptions of mutual amicable relationships for business dealings by HPEs.

> "*I think we trust each other because we have same common ground. I have not seen much conflicts in client meetings, except one time a farmer accused his neighbours of stealing his workers. Compliance in annual membership subscriptions could be a good measure if you can cross-check with UTGA*" (Respondent HPE 1 Forestry)

> "*Farmers trust each other"* (Respondent HPE 2 Sugar).

The next sub-section presents perceptions of technical and financial support in horizontal collaborative relationships for building production capabilities. Results of technical and financial support indicated that all the respondents in the three performance categories perceived receiving minimum technical and financial support. The findings from the study were: HPEs (88.5.%), MPEs (69.6.%) and LPEs (75.9%). This finding implied that technical and financial support did neither account for a big proportion of the farmers' investments, nor for performance differences between HPEs, MPEs and LPEs.

This section investigated the strength of collaborative relationships in vertical and horizontal linkages in explaining performance differences and similarities amongst HPEs, MPEs and LPEs participating in value chains. The findings of the study revealed the following:

In vertical collaborative relationships; findings of the study generally revealed weaker collaborative relationships along vertical linkages for diffusion of knowledge, skills and inputs support for building production capabilities among primary producers. The millers were found to prefer either use of contractors or only to purchase final quality commodities. This finding suggested that the achieved productivity gains that distinguished HPEs from both MPEs and LPEs as found out in results under sub-theme 1 above, could have been attributed to own entrepreneur's learning or acquiring from other sources.

Further, findings of the study also revealed that vulnerability to transactional costs and opportunistic behaviors were perceived to be generally at low levels between millers and primary producers, and did not account for performance differences between HPEs, MPEs and LPEs. With respect to horizontal collaborative relationships; findings of the study revealed no performance differences between HPEs, MPEs and LPEs as a result of access to investment asset specificity such as knowledge, skills and inputs support transfer for building production capabilities.

The findings also revealed low levels of transactional costs in business dealings, suggesting that they could not account for performance differences among HPEs, MPEs and LPEs. However, some level of vulnerability to opportunistic behaviors manifested among LPEs and MPEs business dealings, therefore rendering support in explaining performance differences between HPEs and both MPEs and LPEs. The sub-chapter above presented results of micro level VC enterprise comparative analysis. The next sub-chapter presents results of both meso and macro level VC sector comparative analysis.

5.5 Summary

This chapter investigated entrepreneurial behavioral practices that explain performance differences between HPEs, MPEs and LPEs participating in sugarcane and forestry value chains. Main findings of the study revealed that HPEs attributed their business success to internal environmental factors such as personal involvement, passion, and commitment; factors that are within own control, thus contributing to high productivity gains. On the other hand, MPEs and LPEs attributed their business success to external environmental factors such as quick response by miller, good roads; factors that are outside own control, thus contributing to low productivity. Further, the HPEs were more responsive in meeting market requirements compared to both MPEs and LPEs. The HPE finding versus the MPE and LPE finding strengthened the perceptions of internal environmental factors as being source of business success and achieving desired productivity gains.

CHAPTER SIX; VALUE CHAIN SECTOR ANALYSIS

6.1 Introduction

This section presents the results of the within case analysis and cross-case analysis of the two VC sectors - commercial sugarcane and commercial forestry. The survey instrument had positive statements that respondents were required to respond to using a Likert scale, ranging from not important to very important, or not agree (1) to highly agree (5). The results are presented using quantitative data; however, these were validated by qualitative data results where applicable.

6.2 Results of research themes at meso and macro level VC sector comparative analysis

The results of the five major research themes are shown in Table 6.1:

Table 6.1: Within case and cross-case VC sector analysis

	High Acceptance (%)			Low Acceptance (%)	
VARIABLES	**Forestry**	**Sugarcane**		**Forestry**	**Sugarcane**
KEY SUCCESS FACTORS					
Supplier-entre traits	95.7	100		4.4	0
Productivity indicator	91.3	100		8.7	0
Financial indicator	93.5	100		6.5	0
MILLER'S EXPECTATIONS					
Productivity indicator	76.1	87.5		23.9	12.5
Buyer exp prod -entre traits	50.0	46.9		50.0	53.1
FACTOR INPUTS					
Factor inputs	30.4	37.5		69.6	62.5
LOCATIONAL DIMENSIONS					
Exploitative sharing/ (Price formula)	34.78/(50)	25/(87.5)		65.2/(50)	75/(12.5)
Equitable sharing	26.1	18.8		73.9	81.3
VALUE ADDITION					
Value addition	34.8	15.6		65.2	84.4

Table 6.1 Continued

	High Acceptance (%)			Low Acceptance (%)	
VARIABLES	**Forestry**	**Sugarcane**		**Forestry**	**Sugarcane**
PULL FACTORS					
Grant incentives	39.1	12.5		60.9	87.5
Easy of doing business	19.6	81.3		80.4	18.8
Factor production endowment	56.5	53.1		43.5	46.9
INVESTMENT CONSTRAITS AND OPPORTUNITIES					
Generational strategy	54.4	59.4		45.7	40.6
Functional VC upgrading	19.6	15.6		80.4	84.4
Process VC upgrading	54.4	71.9		45.7	28.1
Formalisation strategy	43.5	6.3		56.5	93.8
REGULATORY REGIME					
Entry regulation	69.6	78.1		30.4	21.9
Governance institutions	78.3	84.4		21.7	15.6
Certification initiatives	37.0	12.5		63.0	87.5
Production standards	67.4	34.4		32.6	65.6
Pricing per grading system	52.2	12.5		47.8	87.5
STRENGTH OF VERTICAL LINKAGES					
Vertical asset specificity	30.4	40.6		69.6	59.4
Vertical transactional costs	10.9	12.5		89.1	87.5
Vertical opportunism	34.8	28.1		65.2	71.9
STRENGTH OF HORIZONTAL LINKAGES					
Horizontal asset specificity	28.3	9.4		71.7	90.6
Horizontal transactional costs	32.6	25.0		67.4	75.0
Horizontal opportunism	50.0	40.6		50.0	59.4
Technical and financial support	32.6	6.3		67.4	93.8

6.2.1 Sub-theme 1: Critical success factors (CSFs) for value chain competitiveness

Research question 1: **Why and how do the perceptions of the CSFs of competitiveness determine performance differences amongst high, medium and low producers and between VC sectors?**

Research question 2: **How are producers' competitiveness expectations compatible with market expectations amongst high, medium and low producers and between VC sectors?**

The results from Table 6.1 under the value chain competitiveness theme indicate that among the key success factors, supplier-entrepreneur traits, productivity practices and financial practices were generally regarded as being very important for business competitiveness. There were no major differences in perceptions between the sectors of sugar and forestry. The findings from the results show the following: supplier-entrepreneur traits sugar (100%)/forestry (95.7%), productivity practices sugar (100%)/ forestry (91.3%) and financial practices sugar (100.0%)/forestry (93.5%). A two-sample t-test with equal variances was run to establish whether there were differences or similarities between the two VC sectors. The results are shown in Tables 6.2 to 6.3:

Table 6.2: Two-sample t-test with equal variances (producer entrepreneur-traits)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	4.609	0.126	0.856	4.355	4.863
Sugarcane	32	4.750	0.078	0.440	4.591	4.909
combined	78	4.667	0.081	0.715	4.506	4.828
Diff		0.141	0.165		0.470	0.187
diff = mean(Forestry) - mean(Sugarcane)					t=0.8574	
Ha: diff < 0		Ha: diff != 0			Ha: diff > 0	
Pr(T < t) = 0.1970		Pr(|T| > |t|) = 0.3939			Pr(T > t) = 0.8030	

A comparison of the mean value for the supplier entrepreneur-traits showed that there was no difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.1970. This implies that there was a general agreement in perceptions among the respondents in both sectors, i.e. the respondents held similar views regarding entrepreneurial traits as key success factors for their business competitiveness. The next table presents tested results of productivity practices that lead to productivity gains in the value chain.

Table 6.3.: Two-sample t-test with equal variances (productivity practices)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	4.457	0.167	1.130	4.121	4.792
Sugarcane	32	4.813	0.070	0.397	4.670	4.955
combined	78	4.603	0.104	0.917	4.396	4.809
diff		-0.356	0.208		-0.771	0.059

diff = mean(Forestry) - mean(Sugarcane) t = -1.7082
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0458 Pr(|T| > |t|) = 0.0917 Pr(T > t) = 0.9542

A comparison of the mean value for the productivity practices showed that there was a moderate difference in the mean rating by sector (forestry – sugarcane): Pr(T < t) = 0.0458. This means that in the sugarcane sector, productivity practices were considered more as a key success factor for business competitiveness than for the forestry sector.

The next table presents tested results of financial practices that complement both productivity practices and entrepreneurial traits in achieving business competitiveness.

Table 6.4: Two-sample t-test with equal variances (financial practices)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	4.674	0.099	0.668	4.475	4.872
Sugarcane	32	4.906	0.052	0.296	4.799	5.013
combined	78	4.769	0.063	0.556	4.644	4.895
diff		-0.232	0.126		-0.484	0.019

diff = mean(Forestry) - mean(Sugarcane) t = -1.8416
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0347 Pr(|T| > |t|) = 0.0694 Pr(T > t) = 0.9653

A perception of the respondents regarding the financial practices of their businesses showed that the mean rating for those in the forestry sector wass smaller than that of the sugarcane sector, with the difference being statistically significant: p (T<t)=0.0347. This implied that cash flow was more crucial for the success of the sugarcane sector than the forestry sector. This possibly could be attributed to the sugarcane crop as being more sensitive to weeds and susceptible to perishability, thus requiring regular cash flow in comparison to the forestry crop.

With regards to producers meeting millers'/market expectations, the respondents' perceptions indicate that the productivity practices are more highly agreed upon by the sugarcane famers (87.5%) than the forestry (76.1%) farmers. However, both sectors indicated the importance of buyer expectations on producer-entrepreneur traits with the following findings; sugar (46.9%) and forestry (50.0%). The findings imply that meeting the productivity practices expected by the miller is very important for the primary producer's business competitiveness in both sectors.

A two-sample t-test with equal variances was run to establish whether there were differences or similarities between the two VC sectors. The results are shown in Tables 6.5 to 6.6 below:

Table 6.5: Two-sample t-test with equal variances compatibility of producer-buyer on productivity practices

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.717	0.236	1.601	3.242	4.193
Sugarcane	32	4.219	0.117	0.659	3.981	4.456
combined	78	3.923	0.149	1.317	3.626	4.220
diff		-0.501	0.300		-1.098	0.095

diff = mean(Forestry) - mean(Sugarcane) t = -1.6731
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0492 Pr(|T| > |t|) = 0.0984 Pr(T > t) = 0.9508

Views of the respondents regarding meeting the millers' expectations when it comes to productivity practices showed that the mean values for those in the forestry sector were smaller than those of the sugarcane sector and the difference is statistically significant, pr (T<t)= 0.0492. This implied that in the sugarcane sector, producers strive more to meet the millers' productivity expectations than they do in the forestry sector.

To validate the quantitative finding above millers were asked to mention the expectations they regarded as critical success factors from the commercial farmers. Findings below revealed a general consistency among the three performance categories of growers being in alignment with meeting expectations of the miller, and which mainly where found to be productivity related practices. The quotations below provide evidence in support of the quantitative findings in the sugarcane sector:

> *"Sustainable cane supply to the factory to run the mill for 10 months without cane shortages….Quality of sugar at the market……A lot of interest being generated by out-grower farmers"* (Out-grower Manager, Sugar Mill).

The response from the miller was then contrasted with growers responses, when the question was then posed to the producers:, i.e., what does the miller expect from you as a commercial farmer?

> *"Quality cane and good recovery. Good quality cane gives a recovery of 9-12% rendement"*. (Respondent HPE 1, Sugarcane).

> *"Good yields, cooperation, farmer to follow advice"* (Respondent MPE 1, Sugarcane).

> *"Mature cane (18 months and above); distance of farm/field (not more than 30 km); security of cane, prompt weeding; application of fertilizers"* (Respondent LPE 1, Sugarcane).

A similar approach was applied to assess the responses with respect to the forestry sector and the following were the results as per quotations below:

> *"Correct material that meets customer expectations…..; right species' and physical properties (form-straightness of the pole/log, material strength, etc)…Correct quantities required….Timely delivery"* (Plant Manager, Forestry Mill).

The miller's response was then contrasted with the grower's responses as per quotations below:

> *"Constant supply, quality woodlots, cheap prices"* (Respondent HPE2, Forestry)

> *"Profit maximization…. lessons learnt in hard way; the buyer rejected first thinning products by approx. 60% , second thinning products by approx. 10%. The reasons for rejection were 'not straight', tiny or small trees. As a result we have improved maintenance of plantation*

when still young, spot slashing to minimise climbers, timely weeding to reduce stunted growth" (Respondent MPE 2, Forestry).

The results of the forestry sector suggests some inconsistency between miller's expectations and growers expectations as growers mainly seem to have been on a learning curve to understand the market expectations. Industry maturity is likely to be one the major factor that could offer plausible explanations for the statistical difference contributing to producers in striving more to meet the millers' productivity expectations in the sugarcane sector than the forestry sector. This is because sugarcane takes shorter time to maturity i.e., 18-20 months to market thus increasing exposure of cane growers to market requirements compared to forestry that requires 8 years as maturity period to market. The next table presents tested results of buyer expectations on producer-entrepreneurial traits that complement productivity practices to achieve business competitiveness.

Table 6.6: Two-sample t-test with equal variances buyer expectations on producer-entrepreneur traits

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.196	0.230	1.558	2.733	3.658
Sugarcane	32	3.281	0.192	1.085	2.890	3.672
Combined	78	3.231	0.156	1.376	2.920	3.541
Diff		-0.086	0.319		-0.720	0.549

diff = mean(Forestry) - mean(Sugarcane) t = -0.2686
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.3945 Pr(|T| > |t|) = 0.7890 Pr(T > t) = 0.6055

Perception of the respondents regarding meeting the millers' expectations of producers' entrepreneurial traits showed that the mean values for those in the forestry and sugarcane sectors were not significantly different: Pr (T<t)= 0.3945. This means that the respondents attached

similar importance to the entrepreneurial traits as a key success factor to their business value chain competitiveness. These results are in conformity with the descriptive findings in Table 6.1 above.

This section examined the critical success factors for value chain competitiveness and the alignment of producer expectations and market expectations in explaining performance differences and similarities between the VC sectors. Findings of the study were as follows:

There was a general agreement in perceptions amongst the respondents in both sectors, whereby respondents held similar views regarding entrepreneurial traits and productivity practices as key success factors for their business competitiveness. Cash flow was more crucial for the success of the sugarcane sector than the forestry sector. This possibly could be attributed to the sugarcane crop as being more sensitive to weeds and susceptible to perishability, thus requiring regular cash flow in comparison to the forestry crop.

Findings of this study revealed a statistical difference for sugarcane producers in striving more to meet the millers' productivity expectations compared to the forestry sector producers. Industry maturity was likely to be one of the major factors that could offer plausible explanations for this performance difference. This was because sugarcane took a shorter time to maturity i.e., 18-20 months to market, thus increasing exposure of cane growers to market requirements compared to forestry that required 8 years as maturity period to enter the market. The next section examined the equitable value chain sharing of proceeds between millers and growers.

6.2.2 Sub-theme 2: Equitable value chain sharing (millers - producers)

Research question 3: **How is the equitable value chain sharing of proceeds perceived as a challenge for competitiveness amongst VC participants and between VC sectors, thus creating winners and losers?**

The results from Table 6.1 above indicate that on the theme of distribution of gains, the cost of factor inputs for production were perceived as less of a challenge to value chain competitiveness by both sugar (37.5%) and forestry (30.4%).

Regarding the sharing of revenue (between millers and producers), the results reveal that exploitative tendencies are not much of a challenge to value chain competitiveness for either sector. However, considering only price as a leading sub-component of exploitative tendencies, exploitation turns out to be a major challenge for value chain competitiveness in sugar (25/(87.5) compared to forestry (34.8/(50). Similarly, the perception of respondents on equitable sharing generally revealed that there is no equitability in the sharing of value chain benefits or gains as indicated by both sectors - sugar (81.2%) and forestry (73.9%).

In addition, the results also reveal that the value addition component is generally perceived as being more of a challenge to value chain competitiveness in sugar (84.4%) than forestry (65.2%). This implies that the milling machines were considered inefficient and the value addition by-product benefits were appropriated by the millers.

A two-sample t-test with equal variances was run to establish whether there were differences or similarities between the two VC sectors. The results are shown in tables 6.7 to 6.8 below:

Table 6.7: Two-sample t-test with equal variances factor inputs

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.913	0.167	1.132	2.577	3.249
Sugarcane	32	3.031	0.208	1.177	2.607	3.456
Combined	78	2.962	0.130	1.145	2.703	3.220
Diff		-0.118	0.265		-0.646	0.409

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.4463
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3283         Pr(|T| > |t|) = 0.6567          Pr(T > t) = 0.6717
```

A comparison of the mean value for the factor production inputs showed that there was no difference in the mean rating by sector (forestry - sugarcane): Pr (T < t) = 04438. This means that in the sugarcane and forestry sectors, the factor production input costs were considered similar.

The next table presents tested results on exploitative practices that could impact on grower's revenue for business competitiveness.

Table 6.8: Two-sample t-test with equal variances exploitative practices

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.870	0.191	1.293	2.486	3.253
Sugarcane	32	2.906	0.145	0.818	2.612	3.201
Combined	78	2.885	0.126	1.116	2.633	3.136
Diff		-0.037	0.259		-0.552	0.478

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.1418
Ho: diff = 0                                     degrees of freedom =       76
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4438         Pr(|T| > |t|) = 0.8876          Pr(T > t) = 0.5562
```

Views on comparison of the mean value for the exploitative practices showed that there was no difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.443858. A similar finding was obtained with regards to equitable sharing of revenue between millers and growers the mean rating by sector (forestry – sugarcane), Pr (T < t) = 0.8218, as per tested results in Table 6.9.

Table 6.9: Two-sample t-test with equal variances equitable sharing

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.652	0.197	1.337	2.255	3.049
Sugarcane	32	2.375	0.219	1.238	1.929	2.821
Combined	78	2.538	0.147	1.296	2.246	2.831
Diff		0.277	0.299		-0.318	0.872

```
diff = mean(Forestry) - mean(Sugarcane)                       t =   0.9281
Ho: diff = 0                                     degrees of freedom =       76

Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.8218         Pr(|T| > |t|) = 0.3563          Pr(T > t) = 0.1782
```

However, taking price formulae (a sub-item for exploitative practices) as a leading indicator, there was a very strong significance difference in the mean rating: Pr (T < t) = 0.0001 (see Table 6.10 below). This means that in the sugarcane sector, producers felt that there was a high level of exploitation by the millers compared to the forestry sector as seen in Table 6.10 below.

Table 6.10: Two-sample t-test with equal variances (price formulae)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.043	0.271	1.837	2.498	3.589
Sugarcane	32	4.406	0.173	0.979	4.053	4.759
Combined	78	3.603	0.190	1.678	3.224	3.981
Diff		-1.363	0.356		-2.072	-0.654

```
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0001         Pr(|T| > |t|) = 0.0003          Pr(T > t) = 0.9999
 Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0001         Pr(|T| > |t|) = 0.0003          Pr(T > t) = 0.9999
```

Evidence of inequitable sharing of revenue between millers and growers in the sugarcane sector complementing the quantitative data findings in Table 6.10 above was revealed in the quotation below:

> *"The worst paid cane farmer in Africa is in Uganda. Farmers are supposed to get 50 % of sugar crystal price. If you put together inputs for sugar production, farmers put in 55-60 %. Currently, farmers earn as follows: Kenya – 52 %, Mauritius – 62 %t, Tanzania –*

52 to 55 %, while Uganda is 35 % and recently after a struggle increased to 37 %. Hardly, no cane farmer in Uganda is getting 40 %. Kakira tried to raise 40 % but he gets it back by deducting 5 % on trash. The price formula is international, for instance, farmers in Australia get approximately 67 %" (Member Association Executive and Opinion Leader – Sugarcane Sector).

The quotation from the growers association members perceive inequality in revenue sharing was due to low percentage share in Uganda's sugar price formulae in comparison to other countries. However, documented evidence from miller's representatives suggests that the inequality in revenue sharing is due to dependency suggesting a captive value chain governance structure and also the use of contractors, as per quotations below:

"Dependency syndrome 'everything must be done by the company', this causes losses for those not serious. i.e. all the activities are charged an interest because it is a loan. But if farmers were doing themselves instead of contractors, all this profit would go to their pockets" (Out-grower Manager, Sugar Mill).

*"All our farmers depend on the miller loans…; they are not on stand-alone. Farmers are not aware that miller gets loans from commercial banks at an interest, which they have to pay back. Despite taking loans, they hardly treat cane growing as a business so that they become self-reliant. Farmers do not know business economics. Contractors contracted by the miller to serve farmers consume part of the farmer's revenue" (*Agricultural Engineering Manager – Sugar Mill).

Qualitative data findings suggest that in the sugarcane sector, farmers are heavily dependent upon the millers, suggesting quasi-hierarchies or captive value chain governance structures. On the other hand, in the forestry sector farmers are independent of the millers, thus suggesting an arm's length market relationship governance structure, as per quotation below:

> *"We have approx. 2000 registered out-growers; they are supplied with subsidized seedlings. The programme is more of a corporate social responsibility; The growers are not mandated to sell their harvest to our company but they have an open market to supply our company"* (Plant Manager, Forestry Mill).

Therefore, study can also argue that the type of value chain governance structure partly explains the inequitable value chain sharing of revenue between millers and growers in the sugarcane sector compared to the forestry sector. Further, the millers employment of contractors by miller's to work on the out-growers' fields does not only reduce the profit margins earned by the growers, but also results in low diffusion of knowledge and skills directly to sugarcane growers, thus contributing to low production capabilities. On the contrary, in the forestry sector, the independence of the growers enabled them to directly manage the development of their plantations, resulting into higher knowledge and skills acquisition for building production capabilities. Table 6.11 presents tested results on value addition plant inefficiency and appropriation of byproducts in the value chain.

Table 6.11: Two-sample t-test with equal variances value addition

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.717	0.221	1.501	2.272	3.163
Sugarcane	32	2.813	0.158	0.896	2.490	3.135
Combined	78	2.756	0.145	1.281	2.468	3.045
Diff		-0.095	0.297		-0.686	0.496

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.3206
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3747         Pr(|T| > |t|) = 0.7494          Pr(T > t) = 0.6253
```

A comparison of the mean value for value addition showed that there was no difference in the mean rating by sector (forestry – sugarcane), Pr (T < t) = 0.3747. This means that in both the sugarcane and forestry sectors, the producers held similar views that the millers' processing machinery were perceived as being inefficient and that the millers benefited from the value addition by-products at the expense of producers. This section examined VC sector performance differences and similarities associated with perceptions on equitable value sharing of benefits between milers and growers. The findings of the study are as follows:

Inequitable revenue sharing of benefits was prevalent more in the sugarcane sector compared to the forestry sector. The primary producers perceived inequitable sharing of revenue between millers and growers as due to low percentage share in the price formula in Uganda compared to other sugarcane producing countries. The type of value chain governance structure also partly explained the inequitable value chain sharing of revenue between millers and growers in the sugarcane sector compared to the forestry sector. The employment of contractors by miller's to work on the out-growers' fields did not only reduce the profit margins earned by the growers, but also contributed to the low diffusion of knowledge and skills directly to sugarcane growers,

which resulted into low production capabilities, investigated under sub-theme 5, in the last section in this study. On the contrary, in the forestry sector, the independence of the growers suggests that it enabled them to have leverage negotiation market powers for better price offers.

6.2.3 Sub-theme 3: Entrepreneurial alertness and regulatory regime

Research question 4: **How does entrepreneurial alertness explain enterprise and VC sector performance differences with possibilities for shaping and re-shaping the governance structures?**

Research question 5: **How does institutional quality explain the emergence of productive, unproductive and/or predatory behaviours reflected in the competitiveness success or failure of enterprises and VC sectors?**

The findings from Table 6.1 indicate that grant incentives have been slightly more of a pull-factor for investment in the forestry sector (39.1%) than for the sugarcane sector (12.5%). On the other hand, the regarding ease of doing business was found to be a major pull-factor for investment in the sugarcane sector (81.3%) as opposed to the forestry sector (19.6%). With regards to factor production endowments as a pull-factor, no major differences were identified in either sector, with forestry at 56.5% and sugarcane at 53.1%. A two-sample t-test with equal variances was run to establish whether there are differences or similarities between the two VC sectors. The results are shown in Tables 6.12 and 6.13.

Table 6.12: Two-sample t-test with equal variances grant incentives

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.217	0.161	1.094	2.893	3.542
Sugarcane	32	1.875	0.205	1.157	1.458	2.292
Combined	78	2.667	0.147	1.296	2.374	2.959
Diff		1.342	0.258		0.829	1.856

```
diff = mean(Forestry) - mean(Sugarcane)                       t =   5.2070
Ho: diff = 0                                     degrees of freedom =       76
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000
```

A comparison of the mean value for grant incentives shows that there is a major statistical significant difference in the mean rating by sector (forestry – sugarcane): Pr (T > t) = 0.0000. This implies that incentives in the form of production cost share grants account for higher entrepreneurial activity and a greater level of commercial investments in the forestry sector. This finding was confirmed by the qualitative data quotation cited below:

> *"Without access to grants. growers would never have managed. The access to grants has also attracted competition from countries like Kenya, who are investing in Uganda because of SPGS model. Therefore, we are looking at ways in great lakes region so that the model can be replicated to their own countries"* (Program Manager SPGS Forestry).

The SPGS grant incentives in form of cost share production grants access was found to not only having been a pull-factor for local entrepreneurs but also attracted entrepreneurs from neighboring countries. The SPGS success model for attracting investments was found to have been designed on a reimbursement system based on meeting performance targets by participating investors. This finding suggested that having in place institutionalized rules for grant incentives access explained successful programs such as SPGS and failed programs such

as; National Agricultural Advisory Services (NAADS), Farm Income Enhancement, Self-startup venture capital 'Entandikwa' in Uganda. The qualitative statements confirmed this finding as per quotations below:

> *"NAADS should have adopted the SPGS model. This issue of scattering resources is political and does not look at viability. You do not force an industry to develop where there is no comparative advantage. The retrospective payment system is good compared to earlier schemes such as 'entandikwa' i.e. start-up venture capital, that failed. Therefore, SPGS it is a good model for developing countries" (*Program Manager SPGS Forestry).

> *"SPGS programme initially well managed with clear objectives and goals linked to private sector investment such as contract signing, inspection of the crop, certification of seed nurseries and contractors accompanied with a very strong clear implementation. When you qualify the funds are disbursed directly to the producer and when this happens becomes an incentive to plant next season… success because of donor support and public land through NFA as incentives"* (Association General Manager – UTGA/Forestry).

> *"If you compare NFA plantations with SPGS supported plantations, you see the difference. You can also compare Farm Income Enhancement and Forestry Conservation with SPGS supported plantations, then you can see a contrast in these woodlots. The*

*example is Kayole estates in Rukungiri District that received support from both projects… (*Program Manager – SPGS/Forestry).

The above quotations were confirmed by a grower as documented in the quotation below:

"*With SPGS most of the grantees are not small people. A requirement of planting 75 acres, this is significant meaning they are not dealing with small people. The grant is conditioned that the investor must invest first (perform to expected standards) before being paid. No politics involved (politically neutral). i.e. the other programs are political and people receive money as thank you. Technical support from programme every season they check/inspect, they produce a report before releasing the second installment. i.e. the installments are phased in 3 phases. Therefore, SPGS is a good model for developing countries like Uganda*" (Respondent HPE 1 Forestry).

The next table presents tested results on ease of doing business.

Table 6.13: Two-sample t-test with equal variances on ease of doing business

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.435	0.157	1.068	2.118	2.752
Sugarcane	32	3.938	0.142	0.801	3.649	4.226
Combined	78	3.051	0.138	1.216	2.777	3.325
Diff		-1.503	0.223		-1.946	-1.059

diff = mean(Forestry) - mean(Sugarcane) t = -6.7455
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

A comparison of the mean value for ease of doing business shows that there is a significant difference in the mean ratings by sector (forestry – sugarcane): Pr (T < t) = 0.0000. This implies that incentives in the form of guaranteed markets, affordable investment land, access to loans in the form of inputs and good infrastructure, account for the greater entrepreneurial activities and

the higher level of commercial investments in the sugarcane sector. A finding that is supported by qualitative data as per quotation below:

> *"Assured market, land availability, miller supplements through improving road network, contracted price to growers being determined at start of season… favourable climate as crops depend on natural fed rain negating irrigation (*Agricultural Engineering Manager – Sugar Mill).

Both the quantitative and qualitative findings in the quotations above regarding ease of doing as a pull-factor for business growth in the sugarcane sector compared to the forestry sector were validated with observed field findings documented in Figures 6.1 and 6.2 below.

Figure 6.1: Fairly good and wide road network in Uganda's sugarcane sector

Figure 6.1 demonstrates the quality of the infrastructure of Uganda's road network, which facilitates doing business in the sugarcane sector. The sugarcane sector's road network is wider and better than the forestry road network, which is narrow and overgrown (see Figure 6.2).

Figure 6.2: Poor and narrow road in Uganda's forestry sector

The next table presents tested results on factor production endowments.

Table 6.14: Two-sample t-test with equal variances factor production endowment

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.609	0.200	1.358	3.205	4.012
Sugarcane	32	3.719	0.163	0.924	3.386	4.052
Combined	78	3.654	0.135	1.193	3.385	3.923
Diff		-0.110	0.276		-0.660	0.440

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.3984
Ho: diff = 0                                     degrees of freedom =       76
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3457         Pr(|T| > |t|) = 0.6914          Pr(T > t) = 0.6543
```

A comparison of the mean value for factor production endowments shows that there was no significant difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.3457. This means Uganda's favorable climate attracts investments in agriculture and agri-business. This finding was validated by a CEO who runs a multi-national corporation and has worked in a number of countries as per quotation below:

> *"Business growth in Uganda has enormous potential as turn-around is shorter than neighboring regional countries. For instance, in Uganda we start harvesting by 7.5 years and 15 years for eucalyptus poles and pine respectively visa vi 10-12 years and 20 years for eucalyptus and pine respectively in South Africa" (*CEO New Forestry Co. Ltd).

With respect to the identification of investment constraints and opportunities that may shape and re-shape the value chains (see Table 6.1) above, pursuing a generational strategy was similarly identified as being crucial in both the forestry (54.4%) and the sugarcane (59.4%) sectors. On the other hand, pursuing functional value chain upgrading was identified as a major constraint in both sectors - forestry (80.4%) and sugarcane (84.4%). However, process value chain upgrading presented itself more as an opportunity in the sugarcane sector (71.9%) than the forestry sector (54.4%). Finally, while the formalization strategy is on average perceived as an opportunity in the forestry sector (56.5%), the sugarcane industry perceived it to be a major constraint (93.7%).

A two-sample t-test with equal variances was run to establish whether there were differences or similarities between the two VC sectors. The results are shown in tables 6.15 and 6.16:

Table 6.15: Two-sample t-test with equal variances generational strategy

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.435	0.196	1.328	3.041	3.829
Sugarcane	32	3.719	0.202	1.143	3.307	4.131
Combined	78	3.551	0.142	1.255	3.268	3.834
Diff		-0.284	0.289		-0.860	0.292

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.9827
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1644         Pr(|T| > |t|) = 0.3289          Pr(T > t) = 0.8356
```

A comparison of the mean value for the generational strategy revealed that there was no significant difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.1644. This meant that respondents held similar views on pursuing a generational strategy, such as succession planning, as an investment opportunity in both sectors. The next table presents tested results on functional VC upgrading, i.e., investing in value addition activities.

Table 6.16: Two-sample t-test with equal variances functional VC upgrading

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.370	0.200	1.356	1.967	2.772
Sugarcane	32	2.375	0.223	1.264	1.919	2.831
Combined	78	2.372	0.148	1.310	2.076	2.667
Diff		-0.005	0.304		-0.610	0.599

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.0179
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4929         Pr(|T| > |t|) = 0.9858          Pr(T > t) = 0.5071
```

A comparison of the mean value for functional value chain upgrading shows that there was no significant difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.4929. This means that the respondents held similar views on functional value chain upgrading as an investment constraint in both sectors. This finding was validated by qualitative data as per the quotation below:

"Processing may not be a priority now as majority of the growers are still embroiled in planting and when it comes to marketing majority plans to sell standing stock i.e. they cannot afford investing in milling plants" (Program Manager SPGS Forestry).

"Development partners going to help in capacity building for harvesting, processing & utilization" (Association General Manager UTGA/Forestry)

Although the primary producers view functional VC upgrading as a challenge possibly due to the initial investment capital requirements, millers and development partners had plans in place to expand processing capacities and entering new markets. The expansion plans presents opportunities for absorbing raw materials produced by the primary producers. The quotations below augment this finding;

"Business growth has much potential in Uganda, look at challenges of the country… you realize a need for power in the country. i.e. what percentage of Uganda is electrified? People use charcoal because no power availability… for instance our pole treatment plant is only 65km from the capital city, but power is not widely distributed beyond our establishment. This gives an indicator of a potential market not only in Uganda but East Africa. Rain pattern in Uganda is good for forestry business with a quick turn-round compared to other countries, by 8 yrs transmission poles are ready. At this time 9-10m are majority while 12m may be between 15-20 percent per hectare. If plantation left for 11-12 years then the 12m become the majority thus enabling growers to increase their income"(Plant Manager – Forestry Mill).

*"Expansion in out-grower farms… increasing sugar exports though currently at small scale, increasing plant crushing capacity to 4,500 tons per day…, exporting power to national grid" (*Agricultural Engineering Manager – Sugar Mill).

The next table presents process VC upgrading, i.e., investing in farm machinery.

Table 6.17: Two-sample t-test with equal variances process VC upgrading

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.478	0.158	1.070	3.161	3.796
Sugarcane	32	3.938	0.168	0.948	3.596	4.279
Combined	78	3.667	0.118	1.040	3.432	3.901
Diff		-0.459	0.235		-0.928	0.009

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -1.9524
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0273         Pr(|T| > |t|) = 0.0546          Pr(T > t) = 0.9727
```

A comparison of the mean value for process value chain upgrading shows that there is a moderate difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.0273. This means that the respondents in the sugarcane sector view process value chain upgrading (e.g. acquiring machinery and increasing production capacity) as an investment opportunity, unlike the forestry sector respondents who viewed it as an investment constraint. This finding further validates the quotation above by the Agricultural Engineering Manager citing expansion plans on out-grower's farms.

The next table presented tested results of the formalization strategy that could enable business transit from operating in an informal to a formal economy, as they pursue business growth strategies.

Table 6.18: Two-sample t-test with equal variances business formalization strategy

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.196	0.191	1.293	2.812	3.580
Sugarcane	32	1.938	0.174	0.982	1.584	2.291
Combined	78	2.679	0.150	1.324	2.381	2.978
Diff		1.258	0.271		0.719	1.797

diff = mean(Forestry) - mean(Sugarcane) t = 4.6475
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

A comparison of the mean value for the formalization strategy shows that there was a significant difference in the mean rating by sector (forestry – sugarcane): Pr (T >t) = 0.0000. This means that the respondents in the forestry sector perceived transforming their businesses from the informal to the formal economy to be an investment opportunity, contrary to the sugarcane sector where it was viewed as a major investment constraint. Results of figure 5.6 Bar chart showing firm ownership of the respondents supports this finding whereby majority firms in forestry sector operated as corporates and partnerships compared to sugarcane sector which had sole-proprietorship as majority firms.

The last item under investigation was regulatory regime in determining the emergence of productive, unproductive and/or at times predatory entrepreneurship. The findings from Table 6.1 indicate that entry regulations and/or anti-entry regulations into the Uganda sugar and forestry sectors (tariff barriers, open access and property rights ownership) were considered to be almost equally important in both sectors, with sugarcane at 78.1% and forestry at 69.6%. This implies that high taxes on imports provide job protection for both industries. On the other hand, open access or competitive policies were favoured by respondents against restrictive

policies such as only one miller per 25-kilometer radius production cluster. Further, the issue of property rights is crucial as a measure for protecting ownership of investments.

With respect to governance institutions (see Table 6.1), the respondents generally agreed that sound institutions (industry regulatory agencies) are vital for promoting a vibrant sector, with sugarcane sector at 84.4% and forestry sector at 78.3%. This implies that regulatory agencies are expected to set standards and enforce rules that promote the business interests of all value chain sector players.

A two-sample t-test with equal variances was run to establish whether there are differences or similarities between the two VC sectors regarding the variables discussed above. The results are shown in Tables 6.19 and 6.20:

Table 6.19: Two-sample t-test with equal variances entry regulation

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.935	0.174	1.181	3.584	4.286
Sugarcane	32	4.094	0.158	0.893	3.772	4.416
Combined	78	4.000	0.121	1.069	3.759	4.241
Diff		-0.159	0.247		-0.651	0.333

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -0.6435
Ho: diff = 0                                     degrees of freedom =       76
Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.2609         Pr(|T| > |t|) = 0.5218          Pr(T > t) = 0.7391
```

A comparison of the mean value for entry regulation shows that there was no significant difference in the mean rating by sector (forestry – sugarcane): Pr (T < t) = 0.2609. This means that the respondents for both sectors held similar views on the need for having high tariffs on imports, open access and clear ownership of property rights. The next table presents tested

results of the governance institutions for enforcing regulatory rules such as entry, tariffs and property rights.

Table 6.20: Two-sample t-test with equal variances governance institutions

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	4.283	0.127	0.861	4.027	4.538
Sugarcane	32	4.156	0.163	0.920	3.825	4.488
Combined	78	4.231	0.100	0.882	4.032	4.430
Diff		0.126	0.204		-0.279	0.532

diff = mean(Forestry) - mean(Sugarcane) t = 0.6201
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.7315 Pr(|T| > |t|) = 0.5370 Pr(T > t) = 0.2685

The respondents in both the sugar cane and forestry sectors held similar views on the need to have sound industry agencies to regulate the behaviour of all players in both sectors. This is evident in the outcome of the comparison of the mean value for the establishment of governance institutions, as the mean rating of Pr (T > t) = 0.2685 shows that there was no significant difference. This finding was augmented by qualitative data findings as per quotations below:

> *"a need for sound sugar policy to come on board, this will be a good venture… COMESA policy on sugar importation is a source of competitive advantage to the local sugar industry because of the high tariffs on imported sugar, otherwise, if it was liberalised, Uganda would not be competitive due to high production costs compared to the neighbouring producing countries. BUT the Federation is trying to push for relaxation on importing sugar, implying that local industry should strategise to lower the production costs" (*Agricultural Engineering Manager – Sugar Mill).

"Lack of policy and standards is hindering commercial forestry industry development and competitiveness" (Association General Manager UTGA/Forestry)

"Currently, sugar policy is in place but as farmers we are petitioning for a sugar board, the roles of the board are:

1) *Research; today millers are doing own research. For instance, in cotton research you mind four stakeholders:*

- *Farmer – yields*
- *Miller – fibre content*
- *Textile – strength of thread*
- *Oil miller – recovery per kg*

The sugar seed cane available is favourable to the miller with high sugar content but giving less tonnage per hectare,i.e. farmer wants cane with high moisture to give weight. Farmer wants long cane because every ratoon gives less output. Further, all stakeholders must have a say before a variety of seed is produced. This should apply to pests, diseases and climate resistance. 2) Security of miller and farmer. i.e. farmer wants good price, miller wants profit and marketing (retail and wholesale) also needs a profit. Therefore, price of sugar crystal must remain comfortable to the miller. In same way cost of producing a kg of sugar crystal from farm to miller, should be low. i.e. cost of sugar production is low in Brazil and Mauritius.3) The board will regulate sugar importation because Uganda will not be competitive.

4) *Undertake control export of excess sugar*
5) *Undertake quality control, i.e. excess white sugar means all molasses 'needed by body' has been removed*

6) *Registration of sugar mills in the country*
7) *Coordinate with research bodies regarding importation of varieties and breeding*
8) *Undertake annual inspections" (*Association Executive Member and Opinion Leader – Sugar).

This section investigated VC sector performance differences and similarities associated with both entrepreneurial alertness such as pull-factors/motivations for business start-up and growth and identification of investment opportunities and constraints that may explain the possibilities for shaping and re-shaping of the value chains. Findings under entrepreneurial alertness and regulatory environment regimes revealed as follows:

Pull-factors and/or motivations for business entrepreneurial start-ups and growth; Grant incentives in form of cost share production grants were found to be the major pull-factors for business start-ups and growth in the forestry sector. The availability of a well designed grant incentives model based upon meeting performance targets was found to not only having attracted local investments but also investments from neighboring countries. This finding suggested that developing countries could develop agriculture and agri-business value chains through well designed cost share production grants based upon a reimbursement system.

While grant incentives explained entrepreneurial activity in the forestry sector, ease of doing business such guaranteed price and market was the major pull-factor explaining business start-ups and growth in the sugarcane sector.

In both sectors, that is sugarcane and forestry value chains respondents perceived factor production endowments similar in attracting entrepreneurial activities. This meant that factor production endowments in geographical areas or clusters such as availability of favourable climate such as rainfall, and a free flow of market information based on 'hearsay' that there are high returns on investment, were found to be the key drivers for entrepreneurial activities in both the sugarcane and forestry sectors.

With respect to investment opportunities and constraints that may shape and re-shape value chain governance structures; Functional VC upgrading such as investing in value adding activities was identified as a major constraint by respondents in both sugarcane and forestry value chain sectors, possibly due to high investment costs involved. Miller's in the sugarcane value chain had investment plans of by-products upgrading such as utilizing sugarcane bagasse for power production. The quest for power in the country for industrialization presented an investment opportunity as it may shift the VC from sugar mills (sugar as core business) to power generation plants (power from baggase as core business) resulting into chain up-grading.

Although the growers in the forestry sector also considered functional VC upgrading as a constraint, the development partners had plans for rolling out SPGS III phase that could avail cost share production grants for functional VC upgrading either through individual access or through joint action ownership of the facilities. Process VC upgrading such as investment in farm machinery was identified as an opportunity by sugarcane sector respondents and as a constraint by forestry sector respondents. The difference in this finding could be attributed to

turn-around investment time with sugarcane enjoying a short-time of 18-12 months while forestry requiring at least 8 years.

Process VC upgrading strategy by sugarcane growers offered an opportunity for the growers to re-shape the value chains from captive to possibly modular or relational value chains. The strategy of modular or relational value chains offers sugarcane growers a possibility of being more independent of the millers and thus increasing their negotiation powers to address the income inequality identified in sub-theme 2 above results. Generational strategy such as business succession was identified as important for business competitiveness by respondents in both sugarcane and forestry value chain sectors. Lastly, business formalization strategy was identified as an investment opportunity by the forestry respondents and as an investment constraint by the sugarcane sector respondents. This finding suggested that formalization strategy was important in the forestry sector possibly for access to institutions for support of long-term forestry activities.

With respect to institutional quality and/or regulatory regime; findings indicated that respondents preferred a sound regulatory environment that promotes property rights ownership and establishment of regulatory boards to regulate the behaviors of value chain actors. The next section presents comparative findings on the sub-theme of compliance with standards for market access.

6.2.4 Sub-theme 4: Compliance with standards for market access

Research question 6: **How do perceptions of compliance with standards for market access explain the performance differences amongst high, medium and low producers and between VC sectors?**

Table 6.1 shows the results of compliance with standards for market access. Compliance with production standards was scored higher in the forestry sector (67.4%) than the sugarcane sector (34.4%). The respondents also compared pricing per grading system averages in the forestry sector (52.2%) to the sugarcane sector (12.5%), where it was considered a major challenge. Regarding compliance with certification initiatives, there were not many observed differences between the scores of the respondents, as both sectors received a below average score with forestry at 37% and sugarcane at 12.5%. A two-sample t-test with equal variances was run to establish whether there were differences or similarities between the two VC sectors. The results are shown in tables 6.21 to 6.23.

Table 6.21: Two-sample t-test with equal variances certification initiatives

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.891	0.209	1.418	2.470	3.312
Sugarcane	32	2.500	0.215	1.218	2.061	2.939
Combined	78	2.731	0.152	1.345	2.427	3.034
Diff		0.391	0.308		-0.223	1.006

```
diff = mean(Forestry) - mean(Sugarcane)                       t =   1.2686
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.8958         Pr(|T| > |t|) = 0.2084          Pr(T > t) = 0.1042
```

A comparison of the mean value for the certification initiatives shows that there is little suggestive difference in the mean rating by sector (forestry – sugarcane): Pr (T > t) = 0.1042.

This means that respondents generally hold similar views regarding compliance with certification initiatives; traceability, post-harvest and haulage waste were considered to be challenges in both sectors. The next table presents tested results on production standards.

Table 6.22: Two-sample t-test with equal variances production standards

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.739	0.223	1.512	3.290	4.188
Sugarcane	32	2.969	0.244	1.379	2.471	3.466
Combined	78	3.423	0.170	1.499	3.085	3.761
Diff		0.770	0.336		0.101	1.439

diff = mean(Forestry) - mean(Sugarcane) t = 2.2934
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9877 Pr(|T| > |t|) = 0.0246 Pr(T > t) = 0.0123

A comparison of the mean value for production standards shows that there is a significant difference in the mean rating by sector (forestry – sugarcane): Pr (T > t) = 0.0123. This means that the respondents in the forestry sector had clearly laid down production standards and guidelines compared to the sugarcane sector. The next table presents tested results on pricing per grading system.

Table 6.23: Two-sample t-test with equal variances on pricing per grading system

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.435	0.236	1.601	2.959	3.910
Sugarcane	32	2.531	0.224	1.270	2.074	2.989
Combined	78	3.064	0.173	1.532	2.719	3.409
Diff		0.904	0.339		0.227	1.580

diff = mean(Forestry) - mean(Sugarcane) t = 2.6617
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9953 Pr(|T| > |t|) = 0.0095 Pr(T > t) = 0.0047

A comparison of the mean value on pricing per grading system shows that there is a significant difference in the mean rating by sector (forestry – sugarcane): Pr (T >t) = 0.0047. This means

that the pricing per grading system was being practiced in the forestry sector compared to sugarcane sector. The study sought qualitative evidence with respect to access to production standards, pricing per grading system and certification initiatives, as per the responses. The results show that in the forestry sector standards were clearly documented and availed to primary producers, unlike in the sugarcane sector where standards were not properly documented but were communicated through seminars, as evidenced in quotations :

> *"SPGS avails standards…, previously they were more of words 'word of mouth', now they are documented. When I came, we were working as policing (i.e. write contract, wait time of expected planting, inspect area planted, then qualify or disqualify), but now we are applying a pro-active approach. Under pro-active, farmers know source of certified quality seeds, we monitor seed survival, land preparation through targeted inspections. We now follow through the chain on performance indicators". (*Program Manager – SPGS/Forestry).
>
> *"Seminars is one of the avenues for communicating the specifications"* (Out-grower Manager Sugar Mill).

The next question investigated whether payment was based on grading system and the kind of incentives available to stimulate better performance in the industry. Findings of the study revealed that in the forestry sector payment was tagged according to the sizes of poles/logs, suggesting that there was some form of elementary grading, unlike the sugarcane sector where the payment system was based only on weight, suggesting that there was no grading system. Further, in the forestry industry the incentivised payment system was based on poles size (diameter and length) which contributes 'to high mill recovery' and/or surpassing order

deliveries. This was found to be a motivater for good performance, unlike in the sugarcane industry where there was no incentivised payment system. The quotations below augmented the above findings:

> *"In Uganda, prices are always different because negotiations are different. In outside countries, price is per cubic metre and it is set by the industry. ….at our plant, each product has its standard which is documented. We have a uniform standard that we use to accept or reject the poles. The poles are then priced according to size. We introduced an incentivised system whereby if a supplier delivers within a certain agreed period and surpasses the order, a bonus of ugx 5000/= is given for each pole delivered.* (Plant Manager Forestry Mill).

> *Company buys on tonne basis, grading system based on rendement requires manpower, this would mean taking field samples before harvesting. Staff also grows cane, this would create a conflict of interest regarding grading themselves. Payment on tonnage basis is not necessarily a demotivator to good farmers, because we grow cane on rain fed agriculture, during the dry season all cane gains renderment.* (Out-grower Manager Sugar Mill).

However, the Out-grower's Manager statement that payment on tonnage basis was not a demotivator for good performance was found to be in contradiction with views from growers who considered price per grading system as a motivator for better performance as evidenced in the quotation below:

"the miller is applying uniform/ average rendement whereby the good farmers are not reaping good pay from their efforts. In addition, the miller is also loosing by applying this uniformity". (Respondent, HPE 1 Sugarcane sector)

Certification initiatives which is synonymous with pricing per grading system, was the next issue investigated using proxy variables such as training in order to reduce on waste and improve compliance to standards. Findings of the study revealed that in forestry sector training was conducted in order to address gaps in performance, while in the sugarcane sector sensitisation coupled with maintenance loans were advanced to growers with threats of Cane Production Contract (CPC) termination if there was no improvement. This signified a stick and carrot approach in the sugarcane sector, with the stick being the possibility of contract termination and the carrot being more sensitisation and financial support in order to foster improvement. These findings are validated by the quotations below:

*"Approx. 10 percent rejected at delivery mainly due to form 'straightness of the pole'. Before a supplier is pre-qualified, an induction course is conducted and refresher courses are also done and the identified weaknesses are addressed" (*Plant Manager Forestry Mill).

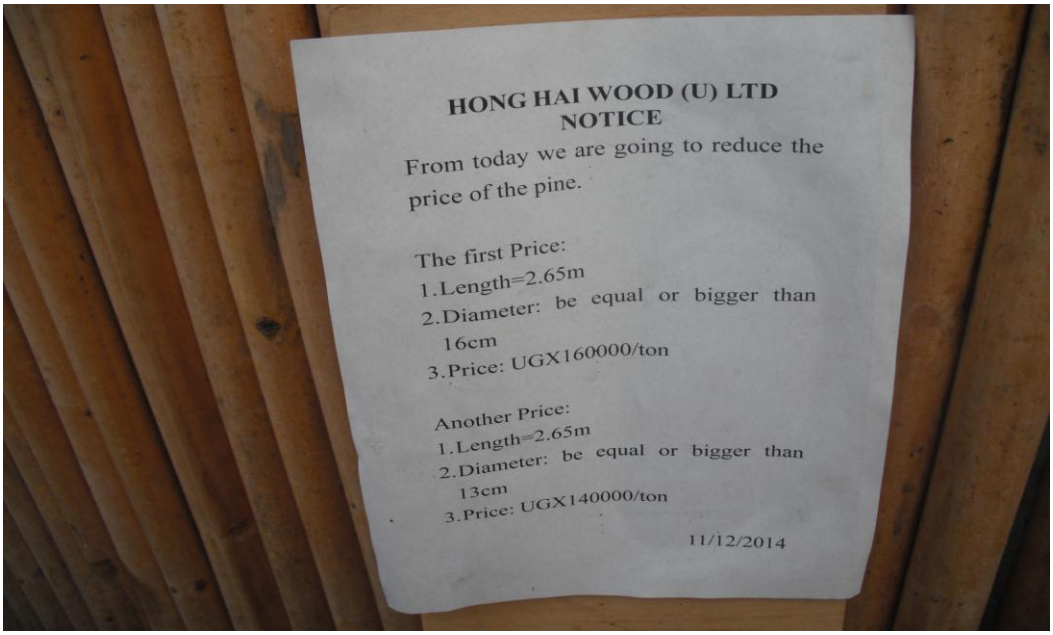
"Less than 5 % is rejected due to not properly maintained to required standards, abandoned fields and/or immature cane burnt fields. …we undertake sensitisation programs through village meetings, radio etc. Advance weeding loans and termination of Cane Production Contract (CPC) is done sometimes" (Out-grower Manager Sugar Mill)"

The qualitative findings above were found to be generally in agreement with the quantitative findings. The observatory field findings documented below in figures 6.3 and 6.4, provided support to both qualitative quotations and quantitative data findings.

Figures 6.3 and 6.4 below revealed pricing based on grading of logs/poles at mills. The prices offered differed from miller to miller and depended on the rule of supply and demand on a particular day. This finding suggested lack of a uniform standardized price per grading system in the forestry industry as observed by the plant manager in the quotation above. Therefore, this caused price uncertainty in the forestry sector, unlike the sugarcane sector, which had an annual price guarantee.

Figure 6.3: Grading logs based on size (diameter and length) at a plywood mill

Figure 6.4: Pricing of logs based on size (diameter and length) at a plywood mill



This section examined VC sector performance differences and similarities as a result of compliance with standards for market access. The findings of the study were as follows:

The forestry sector had clearly well documented production standards availed to growers through standards manuals which acted as a communication tool to facilitate improved productivity and ultimately farm level competitiveness. On the other hand, the sugarcane sector had no documented production standards availed to the growers and the mechanisms of production were mainly communicated through seminars to growers.

The forestry sector had pricing per grading system which was found to be a motivator for better performance despite being rudimentary in application. On the other hand, the sugarcane

sector had no pricing per grading system which was found as a demotivating factor for better performance.

The forestry sector was found to be laying a foundation for certification initiatives as it practiced training programs coupled with an incentivized bonus payment system that enhances traceability and also improves compliance to standards. This was contrary to the sugarcane sector that relied on stick and carrot approach, i.e., threats for contract termination and soft loan advances.

The next section presents findings of vertical and horizontal collaboration for the diffusion of knowledge, skills and appropriate technologies through inputs support for building suppliers/growers production capabilities. The section also assessed issues of transactional coordination costs and opportunistic behaviors among the value chain actors.

6.2.5 Sub-theme 5: Vertical and horizontal collaboration for the diffusion of supply base production capabilities

Research question 7: **How does vertical and horizontal collaboration for the diffusion of production capabilities explain performance differences amongst high, medium and low producers and between VC sectors?**

Table 6.1 shows the results of vertical and horizontal collaboration for building supply production capabilities. The respondents scored all vertical collaboration items below average in both sectors. Vertical asset specificity was scored by the forestry sector at 30.4% compared

to the sugarcane sector at 40.6%. In addition, vertical opportunism was scored by the forestry industry at 34.8% compared to the sugarcane industry at 28.1%, while the least scored was vertical transactional costs with forestry respondents at 10.9% compared to sugarcane at 12.5%. The results paint a picture on the strength of integration of miller-grower relationships for enhanced value chain performance.

Regarding horizontal collaboration for building supplier base production capabilities, all items were scored below average in both sectors, save horizontal opportunism in the forestry sector. Horizontal opportunism was scored by the forestry sector at 50% compared to sugarcane at 40.6%, while horizontal transactional costs were rated by the forestry sector at 32.6% compared to sugarcane at 25%. On the other hand, technical and financial support was scored by forestry at 32.6% compared to sugarcane at 6.3%, while horizontal asset specificity was rated by forestry at 28.3%, compared to sugarcane at 9.4%. The sub-section below presents tested results that revealed differences and similarities in forestry and sugarcane value chain sectors.

Table 6.24: Two-sample t-test with equal variances vertical asset specificity

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.130	0.230	1.558	1.668	2.593
Sugarcane	32	3.281	0.163	0.924	2.948	3.614
Combined	78	2.603	0.164	1.445	2.277	2.928
Diff		-1.151	0.308		-1.763	-0.538

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -3.7415
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0002         Pr(|T| > |t|) = 0.0004          Pr(T > t) = 0.9998
```

A comparison of the mean value for asset specificity in vertical relationships shows that there is a significant difference in the mean rating by sector (forestry – sugarcane): Pr (T <t) = 0.0002. This means that there was a stronger collaborative relationship between millers and producers for inputs support, knowledge and skills transfer in the sugarcane sector compared to the forestry sector. However, a nuanced view by qualitative data revealed that transfer of knowledge, skills and inputs support was through contractors and not directly to primary sugarcane producers as evidenced by the quotations:

> *"Planning is one of the biggest problems. The basic thing which a farmer gives is land... since farmers get inputs and using contractors for land preparation, harvesting and transporting, this creates sluggishness.. i.e. some farmers think cane is for kinyara, but now we are telling them to take it as a business so that they can plan, and save. Further, many farmers have no records…we hope that if farmers take up operations, they will develop capacity and protect their investments"* (Out-grower Manager Sugar Mill).

The Out-grower manager's statement was also validated by a primary sugarcane producer as stated in the quotation:

> *"Under the previous miller, harvesting, loading and transporting were done by the farmers' company – which was the business arm of the association. When current management came on board, this was abolished and they preferred to use contractors. With the previous miller knowledge was gained; we used to have courses in Kampala which was helpful, however, with the current miller not much has been gained*" (Respondent HPE 2 Sugar).

Therefore, the findings suggest weaker collaborative relationships for building production capabilities between millers and growers in the sugarcane sector. Further, the quotation below validates the quantitative findings of weak collaborative relationships for building production capabilities between millers and growers in the forestry sector.

> *"No miller is supporting growers, Nile Ply just buys from growers but without supporting them" (*Program Manager – SPGS/Forestry).

The next table presents tested results on vertical transactional costs which also can have an impact on millers and growers relationship for achieving business competitiveness along the value chains.

Table 6.25: Two-sample t-test with equal variances vertical transactional costs

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	1.957	0.201	1.366	1.551	2.362
Sugarcane	32	2.500	0.162	0.916	2.170	2.830
Combined	78	2.179	0.139	1.225	1.903	2.456
Diff		-0.543	0.277		-1.095	0.008

```
diff = mean(Forestry) - mean(Sugarcane)                       t =  -1.9632
Ho: diff = 0                                     degrees of freedom =       76

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0266         Pr(|T| > |t|) = 0.0533          Pr(T > t) = 0.9734
```

A comparison of the mean value for transactional costs in vertical relationships shows that there is a moderate difference in the mean rating by sector (forestry – sugarcane): Pr (T <t) = 0.0266. This means that transactional costs such as delayed payments from millers to producers and information search for production costs were perceived to have been more of a challenge in the sugarcane sector than the forestry sector. This finding was supported by qualitative data suggesting weaker collaborative relationships between millers and growers in the sugarcane sector, as per quotations below:

"Enough money and/or cyclic revenue is needed to run the business but KSL has a tendency of late payments going between 60-90 days. The delayed payment causes unnecessary interest accruals resulting into marginal profits" (Respondent HPE 2, Sugarcane sector).

"Initially we used to give cash advances to purchase plantations, and provided transport. However, the system was abused whereby some suppliers diverted the funds into other businesses… currently, we pay them within five working days after delivery to enhance their cash flow and introduced suppliers to Eco-bank for loan access. Right now the suppliers are self-sufficient, they can support themselves" (Plant Manager Forestry Mill).

"The main challenge is the continuous reshuffle of ministers; before a minister gets acquainted with the industry another one is appointed. Even now the permanent secretaries are being transferred. At one time we broke down the costs to Minister Mukwaya. The minister requested the miller to give her the breakdown, but the miller refused. Recently, another meeting was organised with the Ministry of Trade, Industry and Cooperatives (MTIC) involving both out-growers and millers. The out-growers gave their cost breakdown of approx. 60 percent but the miller declined to give a cost breakdown" (Respondent - Association Executive Member and Opinion Leader (Sugar).

The quotation above revealed that cost of searching for production costs of the value chain did not only impact upon transactional costs but also the reluctance by millers to reveal their production costs suggested possibility of opportunistic behaviors. The next table presents

tested results on vertical opportunism behaviors that can impact on the quality of relationships between millers and growers in building production capabilities.

Table 6.26: Two-sample t-test with equal variances on vertical opportunism

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.652	0.225	1.523	2.200	3.105
Sugarcane	32	3.125	0.205	1.157	2.708	3.542
Combined	78	2.846	0.158	1.396	2.531	3.161
Diff		-0.473	0.319		-1.108	0.162

diff = mean(Forestry) - mean(Sugarcane) t = -1.4823
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0712 Pr(|T| > |t|) = 0.1424 Pr(T > t) = 0.9288

A comparison of the mean opportunism in vertical relationships shows that there is a slight difference in the mean rating by sector (forestry – sugarcane): Pr (T <t) = 0.0712. This means that there was suggestive evidence of opportunism causing mistrust between millers and producers in the sugarcane sector than the forestry sector. This finding was validated by qualitative data findings below:

> *"Fairly good trust… however there is lack of transparency on the weigh bridge"* (Association Chairman – Sugarcane sector).

This above quotation is supported by the miller's representative quotation below suggesting some level of opportunistic behaviors along the sugarcane value chain.

> *"Small farmers are mainly the problem because at times they sell the fertilisers, but with commercial farmers, this is not quite rampart" (*Agricultural Engineering Manager – Sugar Mill).

Generally, the finding of suspicious opportunistic behaviors between growers and millers validates the existence of weak collaborative relationships for building supplier production

capabilities. The next sub-section presents results for building production capabilities along horizontal collaborative relationships. Table 6.27 below presents tested results of horizontal investment asset specificity.

Table 6.27: Two-sample t-test with equal variances on horizontal asset specificity

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.848	0.161	1.095	2.523	3.173
Sugarcane	32	2.125	0.184	1.040	1.750	2.500
Combined	78	2.551	0.127	1.124	2.298	2.805
Diff		0.723	0.247		0.231	1.215

diff = mean(Forestry) - mean(Sugarcane) t = 2.9276
Ho: diff = 0 degrees of freedom = 76

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9977 Pr(|T| > |t|) = 0.0045 Pr(T > t) = 0.0023

A comparison of the mean value for asset investment specificity in horizontal relationships shows that there is a significant difference in the mean rating by sector (forestry – sugarcane): Pr (T >t) = 0.0023. This means that there was a stronger collaborative relationship among producers and/or producer support agencies for inputs support, knowledge and skills transfer in the forestry sector than the sugarcane sector. This finding was validated by qualitative data findings below:

> "*SPGS support has enabled at least 30 % to improve production planning skills…. The change is more than significant. availability of forest valuation guidelines also gives growers basics on what price they cannot go below (reserve price) during negotiations in order to realize a return on their investments" (*Program Manager – SPGS/Forestry).

The quotation above suggests that transfer of knowledge, skills and inputs support occurred directly to forestry producers from development agencies. This finding suggested strong

horizontal collaborative relationships for building production capabilities. This finding was also complemented with the evidenced adduced in the following quotation:

> *"Growers have acquired technical competency in plantation establishment, maintenance such as thinning, pruning, marking and harvesting. Good relationships exist, especially those under UTGA. When we call cluster meetings, we see the will to share, cooperate, and avail their plantations for study"* (Association General Manager – UTGA/Forestry).

The statement by one of the growers below did not discount the above statements as it rendered support to the findings.

> "*Yes, knowledge through newsletters, client meetings… You access information on prices, even if someone (buyer/miller) comes with a monopoly, but he realises that you are able to chip in from an informed position*" (Respondent MPE 1 Forestry).

With respect to sugarcane sector, qualitative data further supported quantitative data that there were no gains in building production capabilities from horizontal collaborative linkages as evidenced with the quotation below:

> *"Percentage wise in knowledge and skills transfer is still low, … the previous association (KSGL) incurred liabilities, hence farmers lost the trust but now picking up slowly"* (Association Chairman – Sugarcane sector).

The next table presents tested results of transactional costs and their impact on horizontal collaborative relationships.

Table 6.28: Two-sample t-test with equal variances on horizontal transactional costs

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	2.804	0.210	1.424	2.381	3.227
Sugarcane	32	2.281	0.243	1.373	1.786	2.776
Combined	78	2.590	0.161	1.418	2.270	2.910
Diff		0.523	0.323		-0.120	1.167

```
diff = mean(Forestry) - mean(Sugarcane)                       t =   1.6191
Ho: diff = 0                                     degrees of freedom =       76
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9452         Pr(|T| > |t|) = 0.1096          Pr(T > t) = 0.0548
```

A comparison of the mean value for transactional costs in horizontal relationships shows that there is a slight difference in the mean rating by sector (forestry – sugarcane): Pr (T >t) = 0.0548. This means that there was suggestive evidence of minimum occurrence of transactional costs among producers in the forestry sector than the sugarcane sector. This quantitative finding was validated by the qualitative data finding below, which suggested occurrence of transactional costs as a result of replacing labor force taken by another grower without the consent of the labor force owner.

> "*I think we trust each other because we have same common ground. I have not seen many conflicts in client meetings, except one time a farmer accused his neighbours of stealing his workers.*" (Respondent HPE 1 Forestry).

The next table presents tested results of opportunistic behaviors which also causes emergence of transactional costs among producer's relationships.

Table 6.29: Two-sample t-test with equal variances on horizontal opportunism

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.370	0.221	1.496	2.925	3.814
Sugarcane	32	3.000	0.250	1.414	2.490	3.510
Combined	78	3.218	0.166	1.465	2.888	3.548
Diff		0.370	0.337		-0.301	1.040

```
diff = mean(Forestry) - mean(Sugarcane)                       t =   1.0972
Ho: diff = 0                                     degrees of freedom =       76
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.8620         Pr(|T| > |t|) = 0.2760          Pr(T > t) = 0.1380
```

A comparison of the mean value for opportunism in the horizontal relationships shows that there was no significant difference in the mean rating by sector (forestry – sugarcane): Pr (T >t) = 0.1380. This meant that manifestations of opportunistic behaviours were not quite rampart among producers in both the forestry and sugarcane sectors. This finding further supports both qualitative and quantitative data results regarding existence of minimum transactional costs cited in Table 6.29 above. The next table presents tested results regarding access to technical and financial support within horizontal collaborative relationships.

Table 6.30: Two-sample t-test with equal variances technical and financial support

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Forestry	46	3.152	0.173	1.173	2.804	3.501
Sugarcane	32	1.813	0.158	0.896	1.490	2.135
Combined	78	2.603	0.142	1.252	2.320	2.885
Diff		1.340	0.246		0.850	1.830

```
diff = mean(Forestry) - mean(Sugarcane)                       t =   5.4454
Ho: diff = 0                                     degrees of freedom =       76
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000
```

A comparison of the mean value for the technical and financial support showed that those in the forestry sector rated this item very highly in comparison to those in the sugarcane sector. The difference in the means was very high and revealed that the mean rating for forestry was higher than the mean rating for sugarcane: pr (T>t) = 0.0000. This difference was highly

statistically significant, revealing a very strong collaborative relationship between producers and producer support agencies in the forestry sector, as compared to the sugarcane sector. This finding supported results for transfer of knowledge, skills and inputs support from development agencies to growers in the forestry sector as evidenced by results in Table 6.30 above. This section examined VC sector performance differences and similarities as a result of collaborative vertical and horizontal relationships for building supplier production capabilities. The findings were as follows:

Collaborative vertical relationships; quantitative data findings suggested that there was a stronger collaborative relationship between millers and producers for inputs support, knowledge and skills transfer in the sugarcane sector compared to the forestry sector. However, a nuanced view by qualitative data revealed that transfer of knowledge, skills and inputs support was through contractors and not directly to primary sugarcane producers. This finding contributed to existence of weaker collaborative relationships in vertical relationships for building production capabilities for enhancement of productivity gains along the value chain. This finding renders support to the finding of inequitable sharing of revenue between millers and growers and low production capabilities in the sugarcane sector compared to forestry sector, as a result of type of value chain governance structures, see sub-theme 2 above in this study.

Both qualitative and quantitative findings suggested moderate evidence of transactional costs such as delayed payments from millers to producers were more of a challenge in the sugarcane sector than the forestry sector. This finding supported existence of weaker collaborative

relationships between millers and growers for building production capabilities in the sugarcane sector.

Quantitative data revealed suggestive evidence of opportunistic behaviors causing mistrust between millers and producers in the sugarcane sector than the forestry sector. This finding was validated by qualitative data that suggested source of mistrust being due to lack of transparency of the miller's weighbridge and possibility of diverting inputs by growers to other farm activities rather than sugarcane growing.

Regarding collaborative horizontal relationships; quantitative data revealed a stronger collaborative relationship among producers and/or producer support agencies for inputs support, knowledge and skills transfer in the forestry sector than the sugarcane sector. This finding was validated by qualitative data which confirmed that the transfer of knowledge, skills and inputs support occurred directly to forestry primary producers, thus resulting into building production capabilities.

Quantitative data also revealed suggestive evidence of minimum occurrence of transactional costs among producers in the forestry sector than the sugarcane sector. This quantitative finding was validated by the qualitative data finding which suggested occurrence of transactional costs as a result of replacing labor force taken by another grower without the consent of the labor force owner.

Further, findings of the study revealed that manifestations of opportunistic behaviours were not quite rampart among producers in both the forestry and sugarcane sectors. Finally, results of the study revealed a high statistically significant very strong collaborative relationship between

producers and producer support agencies in the forestry sector, as compared to the sugarcane sector. This finding suggested that the transfer of knowledge, skills and inputs support that occurred directly to forestry growers was a result of intervention by development partner agencies participation.

6.3 Summary

This chapter presented findings of the study with respect to entrepreneurial behavioral practices explaining performance differences between sugarcane and forestry VC sectors. The main findings of the study indicated the following: inequitable revenue sharing of benefits was prevalent more in the sugarcane sector compared to the forestry sector; grant incentives explained entrepreneurial activity in the forestry sector, while ease of doing business such guaranteed price and market was the major pull-factor explaining business start-ups and growth in the sugarcane sector; functional VC upgrading such as investing in value adding activities was identified as a major constraint by respondents in both sugarcane and forestry value chain sectors, possibly due to high investment costs involved; process VC upgrading such as investment in farm machinery was identified as an opportunity by sugarcane sector respondents and as a constraint by forestry sector respondents; generational strategy such as business succession was identified as important for business competitiveness by respondents in both sugarcane and forestry value chain sectors; and business formalization strategy was identified as an investment opportunity by the forestry respondents and as an investment constraint by the sugarcane sector respondents; the forestry sector had a pricing per grading system in place and clearly well documented production standards availed to growers through standards manuals which acted as a communication tool to facilitate improved productivity and ultimately farm level competitiveness. On the other hand, the sugarcane sector had no

documented production standards manuals and no price per grading system in place; production capabilities existed in vertical collaborative relationship in the sugarcane sector through use of contractors while in the forestry sector production capabilities existed among the primary producers. The next chapter presents discussion of results.

CHAPTER SEVEN: DISCUSSION OF RESULTS

7.1 Introduction

This chapter provides a discussion of the case study findings presented in chapters five and six and also answers research questions 1 to 7. The discussion applies within case analysis and a cross-case analysis to search for patterns in the theory, literature and data. The chapter is arranged in such a way that the first part of each research question covers performance categories that are: High Performing Enterprises (HPEs), Medium Performing Enterprises (MPEs) and Low Performing Enterprises (LPEs), while the second part of the research question covers a VC sector comparative analysis. In the analysis of the case studies carried out, the principal unit of analysis was the entire value chain, which was explored and analysed at three levels: Micro (growers enterprises), Meso (industry experts, millers and association executives in value chain industry), and Macro (national policies and the regulatory environment). At a micro-level analysis this involved primary producers' firms and/or sole-proprietors who were grouped into three performance categories - high performers, medium performers and low performers. At the meso-level of analysis this involved investigating the relationships between primary producers and millers/processors, while at the macro-level of analysis this involved examining the impact of the existing investment climate and business environment policies upon the competitiveness of commercial sugarcane and forestry value chains.

7.2 Competitiveness performance

Competitive performance was the dependent study variable. This study investigated the dependent variable using objective assessment. Competitiveness performance was measured using farm output (yields) and time to market indicators. The study adopted country specific industry reports published by the Uganda Sugar Manufacturers Association (USMA) which consider farm output of 100 tons/ha as the baseline productivity measure of cane maturity of 18-20 months (Uganda National Sugar Policy, 2010; USMA, 2015). The forestry sector productivity reports were obtained from the saw log production grant scheme, assessing performance of growers and providing indicative productivity measures (SPGS, 2014).

Although this statistical sampling was not the aim of this study, the results from the theoretical sampling indicated that 41.3% achieved 90% project performance while 58.7% performed below 90% in the forestry sector. In the sugarcane sector, only 21.9% achieved the desired industry competitive output of at least 100 tons/ha from 70 percent of their fields, while 82 percent of the growers were producing below expected industry productivity output. Generally both sectors combined, only 33.3% of the respondents achieved the desired competitive performance levels, implying that the majority 66.7% was performing below desired industry performance levels.

The next sections offered plausible explanations on how the independent variables, that is; (1) **management process** that examines competitiveness as the process of managing decisions and processes in the 'right way' (in this study this is described as critical success factors for competitiveness); and (2) **competitive potential** that examines competeiveness as comprising

the generation and maintenance of competitive advantage, (in this study this comprises of; equitable value sharing, entrepreneurial alertness and regulatory environment, compliance with standards for market access, and vertical and horizontal collaboration for the diffusion of suppliers production capabilities). Subjective measures using perceptions was applied in measuring the influence of the independent variables to the dependent variable, that is, competitive performance that examines competitiveness as the ability to perform well.

7.3 Sub-theme 1: Critical success factors (CSFS) for value chain competitiveness

***Research question 1*: Why and how do perceptions of the critical success factors for competitiveness determine performance differences amongst high, medium and low producers and between VC sectors?**

The quantitative results indicated that there was a fit in perceptions regarding critical success factors among high, medium and low performing enterprises. Qualitative results, on the other hand, offered both corroborating and contrasting views. The HPEs attributed their success to internal environmental factors. The CSFs identified by HPEs were mainly entrepreneurial traits, such as personal involvement, being passionate, technical knowledge, timely application of agronomical practices, prompt payment of workers, and entrepreneur commitment. These are internal factors under an entrepreneur's control, which can be developed and nurtured as a business culture, thus resulting in a firm's competencies and capabilities for business competitiveness. On the other hand, the MPEs and LPEs associated their success with external environmental factors. They emphasised CSFs such as rainfall, good climate, timely access to inputs and/or payment as source of their competitiveness. These are factors outside an

entrepreneur's control, which cannot be developed and nurtured for business success. This finding renders support to the available literature and theory on internality and externality.

According to Rotter (1966), who conducted experiments on internality-externality in relation to reward or reinforcement, participants perceived their rewards to be based either on their own behaviours or to external influences. This finding related to the internal-external locus of control behavioral theory. The theory suggests that people with an internal locus of control of reinforcements believe that personal effort is the primary determinant of outcomes, while those with an external locus of control of reinforcements believe that external events are a determinant of outcomes. As a result of Rotter's study, internality gained a lot of interest in entrepreneurship research. Venkatapathy (1984) contended that internality is one of the most entrepreneurial traits, while recent studies have hardly contrasted this finding, and attest to a relationship between internality and business success (Sebora et al., 2009; Ahmad, 2010). Building upon this theory, this study deduced that the observed contrast between quantitative and qualitative data for MPEs & LPEs suggests that when a quantitative tool with critical success factors is given to respondents, they are subconsciously aware of the CSFs that account for business competitiveness, and therefore they tend to tick the items positively regardless of whether they have an internal or external locus of control of reinforcements.

Using a two sample t-test at VC sector level comparative analysis, quantitative findings revealed no significant difference in entrepreneurial traits between producers of sugarcane and forestry sectors, however significant differences were observed in productivity practices indicators (Forestry –Sugarcane), $Pr(T < t) = 0.0458$ and financial practices indicators (Forestry

–Sugarcane), Pr(T <t) = 0.0347 respectively. The results suggested that sugarcane producers compared to forestry producers prioritized critical success factors related to both productivity gains and business financing to enhance their competitiveness.

***Research question 2*: How are producers' competitiveness expectations compatible with market expectations amongst high, medium and low producers and between VC sectors?**

The quantitative findings suggested that HPEs had a slight competitive edge in meeting market expectations with regards to productivity indicators (i.e. quality, supply quantities and compliance with millers' directives) and personal involvement (an entrepreneurial trait), as compared to MPEs and LPEs. Further, all respondents agreed that the millers expect low priced raw material supplies from the growers. Surprisingly, qualitative findings generally corroborated with quantitative findings. In particular, the qualitative findings revealed that the HPEs were aware of the critical success factors that meet market/miller expectations. These factors are mainly productivity-related to the satisfaction of market requirements; therefore the HPEs strived to enhance quality to achieve high recovery at the milling plants.

In addition, HPEs understood the relationship between good quality and weight as sources of better revenue in their businesses, as compared to MPEs and LPEs. This finding was supported by the quotation below and validated by both theory and observable field data in figures 7.1, 7.2 and 7.3 below respectively:

> *"The secret for success for better payment is: rendement and weight of the crop is the basis of real achievement in sugarcane growing, this is the area where most farmers are ignorant. E.g. if you do not apply proper weeding, each stem might weigh 0.5 kg. For my*

case each stem weighs 1.5-2 kg, because there was no competition with weeds. However, the miller is applying uniform/average rendement whereby the good farmers are not reaping good pay from their efforts. In addition, the miller is also losing by applying this uniformity" (Respondent HPE1 Sugar).

Using an example of the cane business for illustration purposes, Mengistu (2013) and Yadav (1991) asserted that a high population density of 150 000 stalks per ha is possible, however Yadav argued that at present, an average of 100 000 stalks per ha is achievable under different growing conditions. This implied that HPEs in Uganda with cane stalks weighing 1.5-2.0 Kgs each, as found out in the HPEs fields, suggested a productivity of 150 to 200 tons per ha. This finding is supported by measured results of Figures 7.1 and 7.2 below that confirmed the quotation cited by the HPE sugarcane producer above.

Figure 7.1 Ugandan cane producer with cane stems weighing 1.5 – 2.0 kg (HPE1)

Field results from Figure 7.1 above verified by measurements in Figure 7.2 below.

Figure 7.2: Five cane stems weighing 12kg on a high producing farmer's field (harvest January 2015)

Conversely, the MPEs and LPEs with cane stalks weighing 0.5-0.8 kg suggests that they were able to achieve productivity of 50 to 80 tons per ha. This finding was supported by results in Figure 7.3 below.

Figure 7.3: Approximately 10 cane stems weighing less than 10kg from a low producing farmer's field (harvest January 2015)

This finding also augmented the theory of internality-externality, in the sense that the critical success factors that account for performance differences between high, medium and low performing producers were perceived to be either within or outside entrepreneurs' control, as evidenced in research question 1.

Using a two sample t-test at VC sector comparative analysis, the quantitative findings revealed no significant difference in buyer expectations of producer-entrepreneurial traits between sugarcane and forestry sector producers. Significant differences were observed in productivity practices indicators (Forestry –Sugarcane), Pr (T <t) = 0.0492, between sugarcane and forestry sector producers. However, this finding is consistent with the findings of research question 1 above on VC sector comparisons. The performance difference can possibly be attributed to cane being a perishable commodity, i.e. it is subject to rapid quality deterioration and thus requires close collaboration between producers and millers to meet tight delivery schedules. This finding is validated by the Cane Production Contract (CPC)[12] that is signed between millers and out-growers, which requires cane delivery within 36 hours of a harvest. Similar studies exist to support the finding of rapid cane quality perishability after a harvest (Eggleston, Legendre & Richard, 2001; Higgins, Antony, Sandell, Davies, Prestwidge & Andrew, 2004; Eggleston, Du Boil & Walford, 2008; Sibomana, Bezuidenhout & Lyne, 2011; Fair Trade Foundation 2013; Ducasse 2013).

Therefore, at the level of micro VC enterprise comparative analysis, the question of performance differences between high, medium and low performing entrepreneurs is explained by perceptions related to internality-externality behavioural theory. The finding of internality-externality is unique to this study in the sense that it has generally corroborated the data patterns from the quantitative data, as evidenced by the qualitative data and validated by observatory field data. Further, a close fit between theory and data makes this finding stronger and better grounded in the theory of entrepreneurial behaviour (Gartner, 1989). This ultimately

[12] Kinyara Sugar Ltd – Cane Production Contract (hard copy available by researcher).

enables the understanding of entrepreneurs' behaviour in the discipline of GVCs (Gereffi et al., 2005), and in designing intervention strategies to enhance competitiveness using the global value chain framework.

Further, the HPEs were also found to be more responsive in meeting market requirements compared to both MPEs and LPEs. This finding strengthened the above finding on perceptions of internal-external environmental factors as being source of business success and achieving desired productivity gains. On the other hand, at the level of meso and macro VC sector comparative analysis, productivity practices' indicators and financial practices' indicators account for the performance differences between sugarcane and forestry value chains. The context accounting for the performance difference is due to sugarcane being a perishable commodity, thus requiring tight delivery schedules to the sugar mill.

With respect to entrepreneurial traits, the finding suggests that entrepreneurs in both value chains (sugarcane and forestry) displayed similar entrepreneurial behavioral traits for business competitiveness. This section illuminated the critical success factors accounting for performance differences between entrepreneurs and VCs. The next section examines whether entrepreneurs' efforts are fairly rewarded in the value chain to enhance competitiveness.

7.4. Sub theme 2: Equitable value chain sharing (miller-producer equitability)

Research question 3: **How is equitable value chain sharing of proceeds perceived as a challenge for competitiveness amongst VC participants and between VC sectors; thus creating winners and losers?**

The quantitative findings of the study were corroborated by the qualitative findings. These findings indicated that all the entrepreneurs (HPEs, MPEs and LPEs) in the value chain perceived that there was no equitable sharing of value chain proceeds between the millers and producers. This finding is in line with similar agro-value chain studies that show inequitable revenue sharing among chain participants, especially the upstream players (Fitter & Kaplinsky, 2001a; Laven, 2005; Vorley & Fox, 2004; Howard, Matikinca, Mitchell, Brown, Lewis, Mahlangu, Msimang, Nixon, & Radebe, 2005; Robinson, 2009; Tijaja, 2010; Terheggen, 2010; Lee, Gereffi & Barrientos, 2011; Barrientos & Visser, 2012; Lee Gereffi & Beauvais, 2012).

At the level of value chain sector comparison, significant differences emerged between sugarcane producers and forestry producers. Using a two sample t-test, the quantitative finding indicated a high statistical significant difference (Forestry –Sugarcane), Pr (T <t) = 0.0001, implying that sugarcane producers perceived high levels of price exploitation in comparison to forestry producers. The qualitative findings corroborated the quantitative findings, suggesting that the difference between the VC sectors was attributed to cane producers' heavy reliance on miller's loan facilities, which attract interest, coupled with a reliance on contractors, which

exposes cane producers to exploitation. This finding suggests that the perceived difference in levels of exploitation between the two VC sectors is due to existing governance structures. The dependency of cane producers on millers suggests that it is a captive value chain, meaning that producers are locked-up in the chain with powers concentrated in the hands of millers (Gereffi et al., 2005). This is in contrast with the forestry sector, in which the producers are not operating in a captive value chain and therefore exercise some leverage. This was confirmed with a comparison of earnings for a fairly competitive eucalyptus pole market between Uganda and South Africa. In South Africa growers earn approximately 25% with millers obtaining a mark-up profit of 15-20% (DFID, 2005), while in Uganda growers earn approximately 20% with millers obtaining a mark-up profit of 20-25%. This was calculated using price field data[13] obtained from UTGA, the association of forestry growers and UEDCL - the main buyer of the utility poles.

On the other hand, the sugarcane sector portrays a dire exploitative situation. An analysis of the revenue sharing formula in Uganda reveals that producers and/or farmers earn 35% and millers 65% as per the existing cane production contracts. A comparison with other sugar producing countries, with revenue sharing based on both mill sugar and molasses, shows: South Africa - 64% farmers: 36% millers (South Africa Sugar Industry Agreement, 2000);

[13] UEDCL buying price of 12M pole USD 233 VAT inclusive, Millers/UTGA price paid to grower for same pole Ugx 145,000/=, 1 USD=3,523.7 Ugx as per Bank of Uganda off-loaded October 28, 2015 see http://www.bou.or.ug/bou/home.html). Operational costs were assumed similar between Ugandan and South African Pole Treatment Plants.

Mauritius - 78% farmers: 22% millers (The Mauritius Cane Industry Authority Act 2011); Swaziland - 68% farmers: 32% millers (The Sugar Act 1967;); Tanzania - 60% farmers: 40% millers; Zambia - 59% farmers: 41% millers; Malawi - 60% farmers: 40% millers (Chisanga et al., 2014).

Therefore, at the level VC enterprise comparative analysis, distribution of gains implication did not offer plausible explanations for performance differences between successful firms and unsuccessful firms. This finding suggested that fair distribution of gains between millers and growers was an external environmental factor beyond entrepreneur's own control, thus reinforcing the results of internality-externality behavioral theory in sub-theme 1 above.

While at the level of meso and macro level VC sector comparative analysis, the comparison reveals that Ugandan sugarcane farmers are one of the most highly exploited in the region and possibly worldwide, as the literature shows that most farmers in the world earn in a range of 60-65% while millers earn 35-40% of the sugar industry proceeds. This high level of exploitation may explain why vertically integrated millers (backward integration) into the farmer part of the value chain can afford to produce their cane hundreds of kilometres away from their mills as they can 'subsidise' the potential loss of their farms from the huge margins they earn as millers. However, for cane farmers in Uganda, who depend entirely on outsourcing the milling of their cane, even a short distance from the miller can render their businesses unprofitable, as they are currently not on the 'sweet side' of the cane payment system.

Evidence from both data findings and the literature suggests that an equitable distribution of benefits among chain participants as evidenced in the forestry value chain sector can be determined by either (1) the form of governance structures with their power dynamics (explained by the GVC framework); or (2) the industry regulatory mechanisms (explained by the new institutional theory) that set the rules of the game. In summary, the GVC framework by Gereffi et al. (2005) contends that shifting the governance structures re-aligns power relationships amongst value chain participants, resulting in equitable wealth distribution.

Unfortunately, the GVC framework is unable to offer plausible explanations for industry legislative mechanisms as an alternative to addressing inequitable wealth distribution. This lacuna found in the GVC framework is well articulated by the new institutional theory (North 1990; Williamson 1998). The next section explores these two theories in detail by examining opportunity alertness or entrepreneurial alertness that can explain the shaping and re-shaping of the existing value chain governance structures. The issue of the regulatory regime and market institutions for competitiveness is examined in detail.

7.5. Sub-theme 3: Entrepreneurial alertness and regulatory regime

Research question 4: **How does entrepreneurial alertness explain enterprise and VC sector performance differences and the possibility for the shaping and re-shaping of the governance structures?**

The GVC framework (Gereffi et al., 2005) assists in mapping the value chain to identify available investment opportunities and incentives. Entrepreneurial alertness enables

entrepreneurs to perceive and exploit available investment opportunities (Kirzner, 1979;; 1997; Bygrave, 1993; Shane & Venkataraman, 2000) in the value chain. When the entrepreneurs pursue these opportunities they are able to redress their earning potential and reduce exploitation. Opportunities that cannot be pursued by entrepreneurs in the value chain are considered to be investment constraints and therefore possible interventions can be proposed. The quantitative findings of this study indicated that factor production endowments are the driving force or motivation for business start-ups and growth for both HPEs and MPEs in comparison with LPEs. Regarding intentions to pursue existing investment opportunities in the value chain, the HPEs and MPEs had a slight competitive edge over the LPEs on pursuing process value chain upgrading. Further, the HPEs and MPEs had intentions of pursuing a generation succession strategy for their businesses. Interestingly, all the respondents (HPEs, MPEs and LPEs) considered functional value chain upgrading and business formalisation strategies as investment constraints.

The findings do not reveal a clear comparative performance cutting edge between HPEs, MPEs and LPEs with respect to entrepreneurial alertness. This finding sheds light on the GEM Report (2014), which ranked Uganda (28.1%) as the top most entrepreneurial country in the world, followed by Thailand (16.7%) and Brazil (13.8%). Interestingly, the USA was found to be lagging far behind with a score of 4.3%, even though the USA is perceived in everybody's mind as being the most entrepreneurial in the world. The GEM Report also rated Uganda's entrepreneurs as top in the world for perceived opportunities (76.9%), perceived capabilities (84.9%) and fear of failure (12.6%). This finding suggests that Uganda's entrepreneurs are alert to finding business opportunities in their environment, and they also believe that they

have the skills to exploit available opportunities coupled with low fear of failure. This study thus deduced that in the context of Uganda which has a high level of entrepreneurial talent, entrepreneurial alertness does not clearly explain the distinction between high performing entrepreneurs and low performing entrepreneurs. This confirms what other studies have attested, which is that what distinguishes high performing entrepreneurs from low performing entrepreneurs is their willingness to be personally accountable or responsible for their own work and/or behaviour (Rotter, 1966; Bonnstetter, 2012).

At the level of value chain sector comparison, significant differences emerged between sugarcane producers and forestry producers with respect to entrepreneurial alertness. Using a two sample t-test, the quantitative findings indicated a high statistical significant difference (Forestry –Sugarcane), $Pr(T > t) = 0.0000$ for grant incentives, and (Forestry –Sugarcane), $Pr(T < t) = 0.0000$ regarding ease of doing business. The results suggested that grant incentives are a major pull factor for entrepreneurial activities in the forestry sector, while ease of doing business factors such as provision of inputs and guaranteed market by the miller/buyer was the major pull factor in the sugarcane sector. The findings from the study suggest that Ugandan entrepreneurs are alert to seizing and exploiting opportunities in the environment, i.e. they can be classified as opportunity-driven entrepreneurs. This finding was confirmed by annual GEM Reports, which rank countries based on their stage of economic development, i.e. factor-driven, efficiency-driven or innovation-driven. According to the 2014 GEM Report, using measures of necessity-driven entrepreneurship vs. opportunity-driven entrepreneurship revealed the following results with respect to opportunity-driven entrepreneurship measures. Uganda, which is classified as a factor-driven economy, was ranked top (80.8%) in this category, competing favourably with the

top efficiency-driven economies of Malaysia (82.5%) and Thailand (80.9%), as well as innovation-driven economies such as the USA (81.5%), UK (83.5%), Sweden (84.2%) and France (82%).

The quantitative t-test results also revealed a high statistical significant difference (Forestry – Sugarcane), $Pr(T > t) = 0.0000$ for business formalisation strategy and (Forestry –Sugarcane), $Pr(T < t) = 0.0273$ for VC process upgrading. The results suggest that the quest for VC upgrading in the sugarcane sector can be attributed to the need to address buyer-producer exploitation, which occurs in captive governance structures and/or contracted out-grower schemes (Vorley & Fox, 2004; Robinson, 2009) and contractors' exploitation of out-growers (Hurly, Sibiya, Nicholson & King, 2015). Meanwhile in the forestry sector, business formalisation strategies could have been appropriate at the time of this research as most of the plantations were progressing to maturity.

This implies that a business formalisation strategy is preferred by the growers to access credit from commercial banking institutions to fund maintenance costs. This is confirmed as per the results in the figure 5. 6, which indicated that the forestry sector had more formalised businesses under the categories of partnerships and corporates than the sugar sector, which had few corporate firms. It can thus be deduced that the differences in pursuing varied investment strategies can be attributed to the sector stage of development. In this case, the commercial sugarcane sector can be considered at growth-mature stage, since it has existed since the early 1920s, collapsed in the civil wars and was then rejuvenated in the mid-1990s. In addition it also takes a short time to market, i.e. approximately two years. On the other hand, commercial

forestry started in the early 2000s and most of the planters are selling intermediate forestry by-products as they progress towards full maturity, since trees take a long-time to market - almost 16 years for pine and 8-10 years for eucalyptus. Generally, this implies that the commercial forestry sector is transiting from infancy to growth stage, which confirms that the stage of industry development is a contributing factor in determining the investment opportunities that shape the governance structures. This assertion can be validated with the qualitative statement below:

> *"The majority are still embroiled in planting … the majority plans to sell standing stock i.e. they cannot afford milling" (Program Manager SPGS – Forestry).*

> *"The maintenance of forestry is current priority… more planting is not on the table, but if gets cheap land with good soil, it may consider planting eucalyptus clones… If gets good proceeds from the second tree thinning, this will help to gauge business viability and possibly venture into own milling"* (Respondent HPE 1 Forestry).

The statement by the SPGS respondent suggests that the growers were still planting to meet their signed contractual obligations in terms of contracted area. The HPE respondent had completed his contracted area with a focus on maintenance. The statement of possible expansion could only be implemented for eucalyptus clones which is a fast growing tree, signifying that time to market (i.e. a global competitiveness indicator) to attract early revenue is going to be critical in investment decision-making. Pursuing VC functional upgrading was to be determined by business viability after selling the tree thinning.

Given the above forestry scenario, then the sugarcane sector which is at growth-maturity stage with a short-time to market relative to forestry should be able to pursue the VC upgrading strategy. According to Gereffi et al. (2005), the GVC framework proposes five governance typologies that oscillate between two extremes - hierarchies and arms' length market transactions (Williamson, 1975). The intermediate typologies are relational value chains, modular value chains and captive value chains. According to the GVC framework, captive value chains are characterised by less power among producers (i.e. growers) due to high dependency on buyers (i.e. millers). Therefore, the GVC framework suggests that in order for the producers to be able to leverage power relations and increase earnings from rents, they have to identify opportunities in the value chain and take up some of the value-adding activities. The opportunities taken up can be in the form of process upgrading (e.g. investing in machinery and efficient production) to increase earnings and thus decrease dependency on millers. This strategy enables structural shifting of the value chain from a captive to a relational or modular value chain, thus increasing the relationship power of the producers. Alternatively, producers can take up the more rewarding investment opportunity known as functional upgrading, which entails deeper vertical integration or setting up a mini or fully processing plant. The resulting investment set-up immensely increases earning potential, thus leading to competitive rivalry in an industry (Porter, 1979; 2008). The resulting competition spurs new waves of industry innovations, which may lead to inefficient firms being liquidated or undergoing mergers through Schumpeterian destructive creative entrepreneurship (Schumpeter, 1934).

Therefore, at the level of micro VC enterprise comparative analysis, in answering the research question of performance differences between high, medium and low performing entrepreneurs, results indicated that entrepreneurial alertness does not offer a satisfactory explanation between successful and unsuccessful enterprises. The finding suggests that all entrepreneurs have similar abilities in perceiving and exploiting investment opportunities, for business start-ups and/or growth in the context of Uganda's environment. This implies that all entrepreneurs can start a business and/or grow a business, even though the business may not necessarily be competitive or successful. The study confirmed that perceptions of own responsibility or own behaviour for business competitiveness explain performance differences between high, medium and low performing entrepreneurs. This finding is related to the internality-externality behavioral theory discussed in sub-theme 1 above.

While at the level of meso and macro VC sector comparative analysis, in answering the question of performance differences between VC sectors, generally the findings reveal that the VC process-upgrading was being pursued by the sugarcane sector, while the forestry sector pursued business formalization strategies. The context accounting for the performance difference is due to the business phase of the sectors, with sugarcane being at growth-maturity stage while forestry was at an infancy-growth stage.

Interestingly, none of the sectors had intentions of pursuing the lucrative VC functional upgrading strategy that increases earnings and thus reduces exploitative tendencies, especially in the sugarcane sector as evidenced in sub-theme 2 above. This could possibly be attributed to the high capital investment financing requirements for setting up processing plant(s). The GVC

framework proposes possible interventionist mechanisms to address this form of lacuna, one of which would be for joint action investment by producers. Another possible option is through grant incentives intervention mechanisms either by external donors as was being proposed Uganda's forestry sector under SPGS phase III or by government providing financing for machinery.

Lastly, where the earlier two options are not applicable, then legislative mechanisms to regulate the industry can be applied. This is best explained by the new institutional theory discussed in the next sub-section.

Research question 5: **How does institutional quality explain the emergence of productive, unproductive and/or predatory behaviors reflected in competitiveness success or failure of both enterprises and VC sectors?**

The previous sections revealed exploitative tendencies by the millers upon growers as well as the inability by primary producers to undertake the more rewarding VC functional upgrading to address their exploitation. This sub-section intends to address the issue by examining the existing regulatory regime through the lens of both the institutional environment and governance institutions (North 1992; Williamson 1998). Business, like sports is a game. In sports, there are clear set rules governing the game, and for the game to be attractive to fans, the play of the game is reflected in the quality of the referee who enforces fair play and the rules. Likewise, a competitive business industry must have both a quality set of rules and quality regulatory agencies governing fair play. This study analysed the existing formal set of

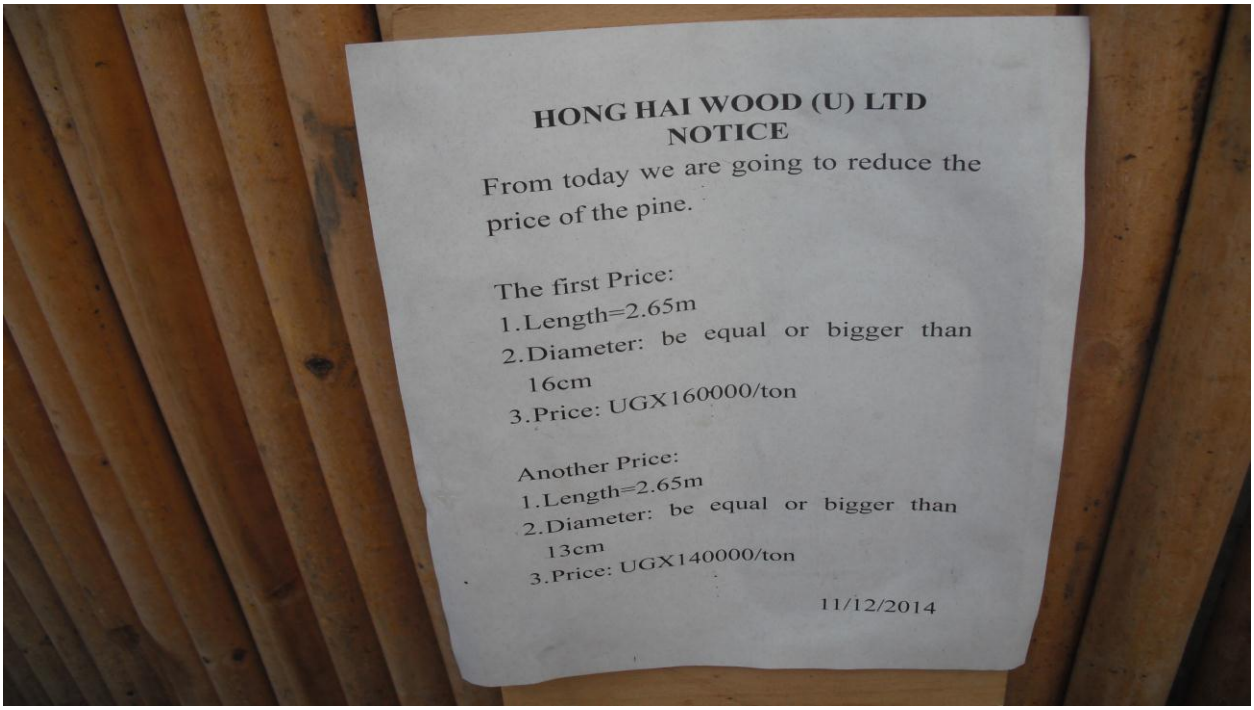
rules of the game, i.e. policies, and the relevant industry regulatory agencies. The quantitative findings on entry regulation revealed that all the respondents (HPEs, MPEs and LPEs) preferred a regulatory environment that promotes fair competition and the protection of property rights. In addition, all the respondents advocated for the establishment of sound regulatory agencies to regulate the industry players. This finding suggests that the regulatory environment exerts almost the same effect upon the entrepreneurs and their business competitiveness. Surprisingly, similar results were obtained when the t-test was run at the sector level to evaluate perceptions on entry regulation and the need for the establishment of regulatory bodies. There was no significant difference between the forestry and sugarcane sectors.

The finding above shows a general agreement between the two sectors with respect to regulations. However, this agreement presents conflicting results, because it was only the sugarcane sector that experienced high levels of exploitation. Further, only the sugar industry is regulated by the sugar zoning 'ring-fencing' policy, which requires the establishment of one mill per 25 kilometer radius (Uganda National Sugar Policy, 2010). The effects of this policy are evidenced by mill(s) inefficiency associated with frequent shutdowns, and low cane productivity due to harvesting overgrown cane[14]. It would seem that it would thus mainly be the sugarcane sector advocating for regulation. This study asserts that the forestry sector's identified need for regulation is likely to be attributed to the value chain practices evidenced in the plywood pine market. Observatory data in the field, which was also verified in the national

[14]Petition Memo to Government (hard copy available) and part of the issues published in print media as 'farmers dare to slit from Kinyara Sugar' see The Observer of 24/08/2015 website: observer.ug/business/38-business/39431-farmers-dare-to-split-from-kinyara-sugar

commercial forestry validation data workshop, revealed that although the pine market is operating in the formal economy, its practices are similar to the informal economy. For instance, some of the milling firms manipulate the weighing systems in their favour, there were no contractual documents governing the transactions, and abrupt price fluctuations are the norm (see Fig 7.4 below).

Figure 7.4: Price fluctuations in the plywood pine market



The scenario of the plywood industry relative to the pole market presents internal contradictions within the forestry sector. The main factor that explains this contradiction is the business philosophy espoused by the buying firms. The lead firms in the pole market are mainly Multi-National Corporations (MNCs) which are certified by an international body known as the Forestry Stewardship Council (FSC). These firms tend to uphold best practices in the marketplace in compliance with periodic audits and inspections by the FSC. This explains the findings of this study, which show comparatively competitive prices offered for poles to

both growers in South Africa and Uganda. Interestingly, Chinese firms that do not subscribe to the FSC's regulatory compliance requirements dominate the plywood industry. This implies that competitiveness in the pole market is attributed to the FSC's set rules of the game, coupled with their governance power to revoke certifications in cases of non-compliance. Examination of the FSC's governance power is beyond the scope of this study because of its global operations. This means that the South African forestry governance will not be examined because it is mainly regulated by FSC legislative mechanisms. The focus of this study was centered on the play of the game of the sugar industry which is regulated by national bodies, with particular reference to South Africa in relation to Uganda. The examination focused on governance power exercised through representation of the key value chain actors on the industry regulatory body. This was a departure from the GVC framework (see Gereffi et al., 2005), which analyses governance power with respect to lead firms in the value chains.

Section 7.3 sub-theme 2 above revealed that the equitable distribution of wealth in the sugar industry is associated with sound statutory institutional formal rules governing the industry players. A deeper analysis of the statutory instruments also revealed that industry regulatory boards have the governance mandate to ensure fair play by the industry players. The South African Sugar Act 1978 & Sugar Industry Agreement 2000 give the mandate to the South African Sugar Industry Administration Board. This Board is composed of one representative appointed by the South African Sugar Association (SASA), two representatives appointed by millers, and two representatives appointed by growers. The Sugar Industry Administration Board reports to the SASA Council which is composed of two major bodies, namely the South African Cane Growers Association (SACGA) and the South African Sugar Millers Association

(SASMA). Both SACGA and SASMA each elect 11 members to form the SASA Council. The positions of Chairman and vice Chairman rotate every two years between growers and millers. Contrasting the South African governance model with the proposed Uganda Sugar Bill 2015, the following is cited in the first Draft Bill of 16 March 2015. The Uganda draft sugar bill proposed a Chairman, five government representatives, three miller representatives and two grower representatives. A meeting was held afterwards and it was agreed to reduce government representation by two and increase the growers' representation to balance with the millers' representation. Interestingly, the draft of 1st June 2015 which emerged after the meeting shows that two vacant government positions had been replaced by millers, meaning five millers and two growers. Further, all the members are appointed by the Minister after consultation with the relevant organisations.

This kind of institutional arrangement in South Africa informs this study; that:

(1) In South Africa millers and growers are treated as equal partners in business, while in Uganda millers are seen as superior to growers, hence the master/modernised slave relationship.

(2) In South Africa decision-making is by consensus due to a balance of power distribution as reflected by equality in numerical representations, while in Uganda the balance of power is tilted in favour of the millers.

(3) In South Africa representation is through a democratic election process by the responsible constituent bodies, while in Uganda the process is autocratic through appointments by the Minister.

(4) In South Africa the government is not involved in the management of the industry affairs, while in Uganda high handedness of government involvement in industry affairs is at play, as evidenced by the methods used to craft the sugar bill with a purpose of serving powerful millers' interests.

A comparison of the institutions in South Africa and Uganda reveals that institutional quality matters for wealth distribution and ultimately industry competitiveness. This finding is supported by studies which show that institutional quality strongly influences wealth distribution (De Soto 2000; Alonso & Garcimartin 2004), competitiveness and growth (Easterly & Levine 1997; Acemoglu et al., 2001; 2002; Rodrik et al., 2002; Sala-i-Martin & Subramanian, 2003). A recent study in South Africa concurred with these studies and emphasised that sound institutional arrangements and good governance influences good performance (Chibanda et al., 2009).

In relation to this study, all the SADC countries were found to have an equitable distribution of wealth in the sugar industry, ranging from 60 to 80% based on both sugar mills and molasses, due to presence of sound institutions. On the other hand, Uganda was found to be highly exploitative with no sound institutions. Despite the crafting of the Uganda Sugar Bill in 2015, which was intended to address this lacuna, the proposed distributive formula of 40% for farmers and 60% for millers based on sugar mills only is still far below the regional and international standards. This study asserts that institutional quality accounts for the observed global competitiveness rankings. This finding was confirmed by the Global Ranking Reports produced by the World Economic Forum. According to the WEF (2010) in their GCR survey

of 2010-2011 which covered 139 countries, the institutional quality of the selected countries in this study was ranked (with low scores meaning strength and high scores weak institutions) as follows: Mauritius 43; South Africa 47; Malawi 52; Zambia 65; Swaziland 70; Tanzania 83 and Uganda 104. The latest Report of 2014-2015 covered 144 countries and revealed a similar trend: Mauritius 35; South Africa 36; Malawi 77; Zambia 52; Swaziland 61; Tanzania 93 and Uganda 115.Expectedly, the countries that improved their institutions are the two leading in wealth distribution - Mauritius and South Africa. Uganda's position declined in the latest ranking, implying a further decline in its institutional environment for competitiveness.

This could explain why the SADC countries are generally globally ranked highly in sugar industry competitiveness compared to Uganda. The poor competitiveness can be attributed to the existing legislative entry barrier, which provides millers with monopolistic positions that enable them to offer low prices to growers and earn abnormal profits. This implies that the rules of the game in Uganda allocate rent-seeking opportunities based on monopolistic protectionism rather than innovation. This finding was confirmed during the interviews when one of the middle-level executives was asked to identify key success factors for the firm's competitiveness:

> *"No competition within vicinity unlike players in other regions"* (Agricultural Engineering Manager – Sugar Mill).

The statement above re-confirms that Uganda's public policy environment favours rent-seeking behaviour (World Bank, 2012) in their World Development Report (WDR) 2013, through monopoly concessions and/or monopsony (WB, 2013) , a situation that promotes unproductive and/or at times predatory entrepreneurship behaviour (Baumol 1990). The

statement above further confirms that the rules of the game in Uganda allocate rent-seeking opportunities based on monopolistic protectionism rather than innovation. This might explain the rise in application for cane milling licenses since the sugar zoning policy was enacted in 2010. Traditionally Uganda had three major sugar mills, yet just before the zoning policy two other medium mills obtained licences. Immediately after, the enactment of the zoning policy the number of total licensed sugar mills rose from 6 to 26, representing more than 300% growth, but less than 50% to-date have been established.

This implies that a number of market speculators obtained monopoly licenses possibly with a purpose of selling them at exorbitant prices to potential prospective investors in the future; the way it happened with some of the privatized public enterprises coupled with asset stripping in Uganda (Kibikyo, 2011; Tangri and Mwenda, 2013). Poulton et al. (2008) and WB (2013), offered suggestions on state intervention mechanisms to redress such a situation of monopoly concessions, by suggesting either through periodic re-tendering or by enacting a competition policy that enables growers to receive a fair price for their output. This finding emphasises the role of institutional quality.

Therefore, at the level micro VC enterprise comparative analysis, in answering the research question of how institutional quality explains performance differences between high, medium and low performing entrepreneurs, no differences were observed, implying that the regulatory environment has a similar effect on all entrepreneurs.

On the hand, at the level of meso and macro VC sector comparative analysis, regarding how institutional quality explains performance differences between VC sectors, initially the findings revealed a general agreement for regulation in both sectors. This finding on agreement presented conflicting results because it was only the sugarcane sector that experienced high levels of exploitation, compounded with the protectionist sugar zoning policy. Therefore, it would mainly be the sugarcane sector advocating for regulation.

The study investigated the paradox and found out that conflicting data emanated from different value chain practices between the pole market and the plywood market within the forestry sector. The FSC regulatory framework governs the pole market, while the plywood market has no regulatory framework. Therefore, the productive entrepreneurial behaviour observed in the pole market and the unproductive entrepreneurial behaviour observed in the plywood market could be accounted for by subscription and compliance to the FSC's regulatory framework. This finding resolved the conflicting data and accounts for the agreement on the need for regulation in both the sugarcane and forestry industry sectors. This implies that institutional quality matters for value chain competitiveness. This finding is unique to this study in the sense that generally it has resolved conflicting data and corroborated data patterns from quantitative data, as evidenced by the qualitative data and validated by the observatory field data. Further, a close fit between theory and data makes this finding stronger and better grounded in the debate of new institutional theory (North, 1990; Williamson, 1998). This finding has also made a major contribution to the current debate of equitable wealth distribution and governance power in the GVC framework (Gereffi et al., 2005; Brewer, 2011; Fernández, 2015). This has been achieved by breaking new research frontiers and

demonstrating that governance power through consensus exercised by national regulatory bodies is the driver of equitable value sharing and ultimately competitiveness, rather than governance by powerful lead firms.

This study also found out that institutional quality defined by the set of rules of the game and governance power is a precursor to competitiveness. This has been confirmed by the Global Competitiveness Reports of 2010-2011 and 2014-2015, which ranked Uganda at the bottom of the pyramid regarding quality of institutions. This (quality of institutions) possibly explains the high business failure rate in Uganda, despite the country being on top of the pyramid in business start-ups in the world (GEM Report, 2014). The case of Uganda demonstrates that while a country can possess high entrepreneurial talent in business start-ups, institutional quality is the *gravitational force* that sustains business competitiveness success in the global economic storms. The next section discusses standards for market access in the context of the GVC framework.

7.6. Sub-theme 4: Compliance with standards for market access

Research question 6: **How do perceptions of compliance with standards for market access explain performance differences amongst high, medium and low producers and between VC sectors?**

The previous sub-section revealed that the quality of institutions matter for a country's competitiveness. This section discusses the role of standards in determining competitiveness in the context of the GVC framework. Standards provide a medium of communication for buyers'/market requirements, accompanied by financial flow to the suppliers in one direction

and flow of the product/commodity to the market in the opposite direction along the value chain. The GVC framework defines these standards as key parameters for market access, covering product standards, process standards, timely delivery of quantities, and finally pricing per grading systems (Humphrey & Schimtz, 2001). At the level of primary production in the agri-value chains, it involves production of raw materials by applying best agronomical practices. The agronomic practices generally include product/commodity standards, process/growing standards, input-output quantities and timing of operations. (The study applies the use of the term agronomical practices interchangeably with production standards). The pricing per grading system of the commodity is an output of the different management/handling of production standards and provides a reflection of quality performance differences and ultimately farm enterprise competitiveness. To maintain quality standards, value chain actors are encouraged to join a voluntary certification initiative system that ensures market access and thus competitiveness.

The quantitative results revealed a low use of pricing per grading system for transactions between producers and buyers. Similarly, a certification initiative system was not applicable to the primary producers and/or growers. These findings imply that generally all respondents felt the impact of the absence of credible pricing per grading systems, as well as a lack of certification initiative systems that foster value chain competitiveness. Despite the low applicability of pricing per grading systems and lack of certification initiatives, all respondents generally accepted having access and exposure to production standards. Therefore, the extent of applicability of pricing per grading systems, certification initiatives and production

standards cannot be used in explaining performance differences between high, medium and low producers in this study.

At the level of value chain sector performance comparison, significant differences emerged between sugarcane producers and forestry producers with respect to production standards and pricing per grading systems. There were no significant differences with respect to certification initiatives between forestry and sugarcane sectors. Using a two sample t-test, the quantitative findings indicated a high statistical significant difference (Forestry –Sugarcane), Pr (T >t) = 0.0123 for production standards and (Forestry –Sugarcane), Pr (T >t) = 0.0047 pricing per grading systems.

This finding can be augmented with the foreign study tour trips organised by SPGS for the Ugandan forestry sector producers (see fig 7.5 below) for exposure to production standards, unlike the sugarcane producers. The study tour is not limited to plantation production standards but also covers forestry operations along the entire value chain, starting from input suppliers to markets. In addition to foreign study tours and local exchange visits, SPGS developed an industry standards manual for plantation establishments, which were availed to all registered growers with the project. Unfortunately, this formal approach for unified production standards and study tour platforms for sharing experiences is lacking in the sugarcane sector.

Figure 7.5: Ugandan forestry producers at Bracken Woods plantation in South Africa.

Source: Primary field data (Author in striped green jacket writing on pad)

In addition to significant performance differences regarding production standards, the use of pricing per grading systems showed a significant difference between Uganda's commercial forestry and sugarcane sectors. The significant difference could be attributed to the basis of payment systems in place. The findings of this study revealed that the sugarcane sector was mainly applying the quantity-based cane payment system. The statement below can confirm this:

> *"... the miller is applying uniform/ average rendement whereby the good farmers are not reaping good pay from their efforts. In addition, the miller is also loosing by applying this uniformity"* (Respondent, HPE 1).

The statement above can be validated by Table 7.1 below, comparing fixed quantity payment systems with the adoption of a sucrose payment system. In processing sugar, sucrose is the main extract meaning that high sucrose defines high quality cane.

Table 7.1: Comparison of fixed cane quantity payment system and sucrose payment system

Rendement (Sucrose recovery per ton cane) %	*Quantity payment (Ugx/ton)	USD Equiv. per ton	Sucrose payment (Ugx/ton)	USD Equiv. per ton
9	69,930	23.94	59,940	20.52
10	69,930	23.94	66,600	22.80
11	69,930	23.94	73,260	25.08
12	69,930	23.94	79,920	27.36

*Average annual rendement at 10.5, average market price Ugx 1,800,000/= per tonne includes both interim & final payment as per CPC, exchange rate 1 USD = 2921.17 UGX (Bank of Uganda[15] 20 March 2015).

Table 7.1 above demonstrates that the fixed quantity earnings are a disincentive for productivity, depicting a frustrated success story as implied in the quotation above. The sucrose payment system would be an incentive for low performers to systematically increase sucrose content in their sugar cane in order to earn higher revenues. Therefore, everybody gains and the country gains, as predicted by the 'invisible' hand theory (Smith, 1776).

The fixed cane payment system was found to be outdated in comparison with the SADC sugar producing countries. SADC countries such as South Africa abandoned the quantity delivered payment system in the 1925/26 season, then transformed to the sucrose cane payment system in the 1926/27 season, and progressed to the recoverable value (RV) cane payment system in

[15]www.bou.or.ug

the 2000/01 season (Wynne, Murray & Gabriel, 2009). According to the South African Cane Growers Association, the purpose of upgrading to the RV cane payment system was to maximise sucrose recovery by reducing sucrose loss in fibre and non-sucrose (see www.sacanegrowers.co.za[16]). This implies that a good cane payment system provides incentives for both producers and millers to maximise cane quality for good recovery and high yields, and to also improve mill performance. This finding is validated by the quote below:

> *"If you look after cane properly, you get good rendement (i.e., if cane is left in bush, rendement is low), but this is not only on the side of the farmer; also good and efficient machines/mill is needed to capture good rendement"* (Respondent HPE 2).

A World Bank and FAO-sponsored study covering Commonwealth Development Corporation (CDC) investment projects in Africa did not discount this finding. The study revealed that Ugandan sugar mills are not competitive in production costs relative to SADC sugar producing mills as per paper extract of Tyler (nd) from the main study report (Poulton et al., 2008).

Unlike the sugarcane industry, the forestry industry applied an ad hoc pricing per grading system for logs delivered (see figure 7.4 above). The system is characterised as ad hoc in the sense that it was not applied uniformly in the marketplace. This implies that Uganda's pricing per grading system fell short of the minimum requirements for driving competitiveness, unlike the standardised pricing per grading system found in South Africa. During the study tour

[16]www.sacanegrowers.co.za/wf-content/uploads/2011/04/Explanation-of-RV-formula-PRICE-Flowchart

organised by SPGS, the author asked what the company felt were their competitiveness success factors and this was the response:

> *"Number 1 Quality, Number 2 Quality, and Number 3 Quality"* (Respondent Director - Bracken Woods).

The findings revealed that quality is a competitiveness dimension measured along the entire value chain, with proceeds fairly shared between the processors/millers and the growers in the South African forestry industry. The market expected growers to deliver logs with the following quality specifications/standards as alluded to in the quotation above:

- No.1 Quality – Log dimensions (prescribed by diameter and length) achieved by a good thinning regime in the plantation.
- No.2 Quality – Form of log (prescribed by straightness of the log) i.e. deformed logs are not desirable for the timber and pole markets.
- No. 3 Quality – Knot free logs (prescribed by having all-round uniformity without major dents) achieved by good pruning in the plantation.

The number 1 quality indicator gave growers an additional competitive edge, whereby big logs entitled a grower to an immediate bonus upon delivery to the mill. This is because big logs were found to achieve a higher recovery rate of approximately 55% compared to medium logs which achieve approximately 45%. The logs are labeled for traceability, processed and timber graded as shown in figures 7.6 & 7.7 below. Grade S 7 timber is characterised by uniformity in rings, meaning that the wood fibre strength properties are evenly spread. Such timber commands premium prices in the market and once sold, the grower also receives a bonus share of the premium price. Grade S 5 timber is characterised by non-uniformity in rings, including minor observable dents. The factors accounting for the discrepancy in uniformity and non-

uniformity in rings is due to a timely application of the thinning regime at the plantation. This implies that once there is a delay in thinning the rings tend to compact due to slow growth, and once thinning is done then the rings expand suddenly due to rapid growth. The timing of the thinning activity thus has an effect on growth uniformity. Further, figures 7.8 and 7.9 below show the aspect of knots in grading timber, thus emphasizing the need for good and timely pruning of the standing logs in the plantation.

Figure 7.6: Grade S 7 timber characterised by ring-uniformity

Source: Primary field data courtesy of SPGS Study tour Bracken Woods South Africa

Figure 7.7: Grade S 5 timber characterised by non-ring uniformity

Source: Primary field data courtesy of SPGS study tour Bracken Woods South Africa

Figure 7.8: Well pruned log characterised by the knot firmly embedded in the woodlot fibre

Source: Primary field data courtesy of SPGS study tour Bracken Woods South Africa

Figure 7.9: Poorly pruned log characterised by dead knots affecting fibre strength in the woodlot (reject)

Source: Primary field data courtesy of SPGS study tour Bracken Woods South Africa

A comparison of lessons from the South African forestry industry with respect to Uganda reveals that in South Africa, uniform industry standards have been developed for the entire value chain. Further, all industry players enforce these standards through mandatory membership to the FSC's certification governance mechanisms for market access. This was found to be in contrary to Uganda's forestry industry case. Although the pricing per grading is based on similar log characteristics to that of the South African industry, the pricing per

grading varies from buyer to buyer in Uganda. This is because there are no uniform, developed market industry standards along the entire value chain. Further, only a few companies subscribe to the FSC's certification governance mechanisms, and these are mainly MNCs. This implies that the majority of Uganda's industry players are neither governed by national standards nor international standards for market access[17]. The pricing is done with regard to certain log characteristics and this creates an incentive for growers to improve and supply better quality logs to earn better prices. This improves productivity and hence value chain competitiveness in the forestry sector, as compared to the sugarcane sector that applies no grading system.

The findings of this study above can be classified as being quite unique in the sense that generally it corroborated data patterns from the quantitative data, as evidenced by the qualitative data and validated by observatory field data. The data patterns revealed a close fit between theory and data, which makes this finding stronger and better grounded in both the GVC framework (Gereffi et al., 2005) and the debate of new institutional theory (North, 1990; Williamson, 1998), which explain the relationship between standards and competitiveness at firm, sector, country, regional blocks and international trade levels.

Therefore, at the level of micro VC enterprise comparative analysis, the findings revealed no significant performance differences between high, medium and low producers. The finding implied that the extent of complying with industry standards is more of an external

[17] At time of data validation FSC was sponsoring a pilot study covering four growers. This was to be scaled-up later to cover all growers and other industry players.

environmental factor having similar effects on all entrepreneurs' business competitiveness. However, at the level of meso and macro VC sector analysis, strong significant performance differences emerged between the sugarcane and forestry sector in Uganda, as enumerated below:

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- The forestry sector was found to have a well-developed standards manual for growers as a pre-condition for forestry plantation establishments
- The forestry sector growers were also exposed to improved business farming and processing techniques along the value chain through foreign study tours.
- In addition, the forestry sector practiced a rudimentary pricing per grading system, which was found to be an incentive for industry competitiveness if it happens to be well-developed and standardized like in South Africa.

Surprisingly, all these basic requirements of production manuals, exposure through foreign study tours and the application of pricing per grading systems were found to be non-existent in the sugarcane sector, save for leaflets bearing scant standards information that were distributed to interested growers by millers.

Therefore, the observed performance difference between sugarcane and forestry sector value chains could be attributed to the availability of well-developed and documented standards that served as communication tools for industry players. According to a European Commission (EC) Report (2012), renders support to this finding as it contended that that well-developed standards not only serve as communication tools, but also improve the growth and competiveness of enterprises and industry.

The next section discusses collaboration in vertical and horizontal linkages in strengthening production capabilities using the transactional cost theory which is part of the new institutional theory, with the purpose of informing the emerging GVC theoretical framework.

7.7 Sub- theme 5: Collaboration in vertical and horizontal linkages for diffusion of production capabilities

Research question 7: **How does vertical and horizontal collaboration for diffusion of production capabilities explain performance differences amongst VC participants and between VC sectors?**

The previous section revealed that the establishment of formal standards acts as a communication tool for inter-firm relationships' coordination for value chain competitiveness. This finding suggests that the adoption of standards facilitates knowledge and skills transfer, which partly contributes to the diffusion of supply production capabilities in the industry. The level of availability of supply production capabilities determines the choice of the governance structure to coordinate inter-firm relationships; either through spot markets or hierarchies (Williamson, 1975). The GVC framework by Gereffi et al. (2005), which is considered to be an extension of the TCA (Williamson, 1975), offers intermediary networks or quasi-hierarchies (Humphrey & Schmitz, 2000) for inter-firm relationship coordination and production organisation in the form of modular, relational and captive value chains. The existence of the various networks for the organisation of production and coordination of inter-firm relationships implies the existence of both vertical and horizontal linkage mechanisms.

Porter (1998) argued that, the existence of comparative advantage, economies of scale and excessive vertical integration are no longer sources of competitiveness and innovation. He contended that it is close linkages between buyers, suppliers and other institutions that are the source for firm, industry and sector competitiveness which is reflected in productivity (Porter, 2009). This statement affirms that the level of strength of collaborative relationships in both vertical and horizontal linkages is the source for competiveness.

According to Navdi and Halder (2005), the cluster theoretical approach assesses the gains of clustering as a result of joint action, while the VC approach explores vertical linkages between firms and external actors. Although both approaches offer complementary synergies to each other, they do not elaborate on the measures applicable in assessing the strength of the inter-firm relationships (Martin & Sunley, 2003; Gereffi et al., 2005). This missing link is filled by the transactional cost approach (Williamson, 1975), which analyses investment transactional costs involved in inter-firm relationships. Williamson (1975) identified the transactional costs in the form of specific investment asset specificity, uncertainty, frequency of transactions, and opportunism. In regards to this study, building supplier production capabilities involve undertaking investment asset specificity in terms of provision of inputs, knowledge and skills acquisition. It also involves transactional costs related to searching, monitoring and enforcement of contracts by either party; costs considered as eroding profit margins. More investments in building mutual trust relationships are crucial in order to minimise opportunism. This study adopted these measures in assessing the strength of collaborative vertical and horizontal linkages for the building of supplier production capabilities.

The quantitative results revealed no major differences in perceptions among HPEs, MPEs and LPEs with regards to access to investment asset specificity and vulnerability to transactional costs and opportunism along vertical linkages. Similar results were obtained regarding horizontal linkages, save for opportunism whereby LPEs' and MPEs' perceptions had slightly above average scores. This finding implies that all primary producers have similar opportunities when it comes to access to industry incentives in the form of inputs provision and knowledge transfer both in vertical and horizontal linkages for their businesses. They also operate in a similar business environment with vulnerability to transactional costs and opportunism. Therefore, access to investment asset specificity, vulnerability to coordination transactional costs and opportunism do not offer plausible explanations for performance differences between high, medium and low producers in this study.

At the level of value chain sector analysis, using a two sample t-test, the quantitative findings indicated a very strong statistical significant difference (Forestry –Sugarcane), Pr (T <t) = 0.0002 for investment asset specificity in vertical linkages and (Forestry –Sugarcane), Pr (T >t) = 0.0023 for investment asset specificity in horizontal linkages. With respect to vulnerability in coordination transactional costs, the findings indicated moderate significant differences (Forestry –Sugarcane), Pr (T <t) = 0.0266 in vertical linkages and suggestive or little evidence (Forestry –Sugarcane), Pr (T >t) = 0.0548 in horizontal linkages. In addition, for vulnerability to opportunism, the findings indicated suggestive or little evidence (Forestry –Sugarcane), Pr (T <t) = 0.0712 in vertical linkages for the sugarcane sector.

The findings above suggest strong collaborative vertical linkages (primary producers/millers) with respect to investment asset specificity in the sugarcane sector. The finding shows that the provision of inputs, knowledge and skills transfer accrue from millers to farmers, thus building supply base production capabilities in the sugarcane sector. Surprisingly, a nuanced view of the qualitative data revealed contradictory results as evidenced in this statement by an Opinion Leader/ HPE:

> *"With Booker Tate knowledge was gained, we used to have courses in Kampala and this was helpful, however, with the current miller not much knowledge has been gained. Under Booker Tate cane cutting, loading and transporting was by the farmer's company – which was the business arm of the farmers' association. When current management came on board, this was abolished and instead they preferred to employ contractors".*

The statement suggests that diffusion of knowledge and skills in Uganda's sugarcane sector has occurred through contractors and not millers. A study by Hurly et al. (2015) of small-scale growers in the South African sugar industry arrived at similar results, possibly due to their heavy reliance on millers. On the other hand, strong collaborative horizontal linkages exist with respect to investment asset specificity in the forestry sector. This implies that input support, knowledge and skills transfer in the forestry sector is through farmer to farmer linkages and/or through farmers' association or farmers' support agencies, as evidenced by the t-test results showing very strong significant differences (Forestry –Sugarcane), $Pr(T > t) = 0.0000$ regarding access to both technical and financial support from farmers' development agencies. This finding is corroborated with both foreign and local tours being organised by

SPGS – a development support agency in conjunction with UTGA – the National Farmers Association, with aims of equipping forestry growers with technical knowledge for building production capabilities (see Figures 7.10 and 7.11 below).

Figure 7.10: Ugandan forestry commercial farmers learning nurturing of quality tree seedlings

Source: Primary field data courtesy of SPGS study tour Mondi nursery facility - South Africa

Figure 7.11: Ugandan forestry commercial farmers on net working and information sharing testing the strength of the pole required by the market

Source: Primary field data courtesy of UTGA/SPGS local study tour New Forestry Company Ltd- pole treatment plant in Uganda

The pictures above (Figure 7.10 and Figure 7.11) demonstrates that there was direct knowledge and skills transfer to forestry commercial producers to build their production capabilities by being exposed to value chain operations and practices of both vertically integrated millers and commercial growers through foreign and local study tours. This phenomenon was found lacking in Uganda's sugarcane industry, as evidenced by weak localised farmers' associations, a situation further exacerbated by the absence of a unifying National Sugarcane Farmers Association.

The findings above explain the investment asset specificity in vertical and horizontal linkages for inter-firm relationships. However, as firms engage in the exchange process, they may be

vulnerable to coordination transactional costs and opportunism by either party involved in the execution of the contracts. The quantitative findings of this study revealed that the sugarcane sector is vulnerable to coordination transactional costs, especially with respect to delayed payments after the delivery of sugarcane to the sugar mill. The study also found out suggestive evidence of a lack of mutual trust between cane producers and miller(s). These findings were corroborated by qualitative findings, as evidenced by Opinion Leader/HPE Sugarcane sector:

> *"... miller has a tendency of late payments going between 60-90 days, the delayed payment causes unnecessary interest accruals resulting into marginal profits"(*Opinion leader HPE sugarcane sector).

On the contrary, the Plant Manager of the Forestry Mill had this to say;

> *"we pay suppliers within five working days to enhance their cash flow."*(Plant manager Forestry mill)

The two statements above affirm that the sugarcane sector growers are vulnerable to coordination transactional costs in comparison to forestry growers. This kind of vulnerability also highlights opportunism in the sugarcane sector, as evidenced by the statement of the Association Executive regarding the quality of relationships between growers and millers:

> *"...uh, uh.... fairly good trust however there is lack of transparency on weigh bridge, ... some farmers tend to divert the inputs".(*Association executive sugarcane sector)

The statement above implied that the relationship between primary producers and millers in the sugarcane industry was characterised by suspicion, thus affecting mutual trust. This finding is in agreement with similar studies, which found out that mutually benefiting relationships develop trust (Dyer 1997; Chivaka 2003), while exploitative relationships exhibit low levels of

trust and tend to be characterised by tensions that affect productivity and competitiveness along the value chain (da Silva 2005; Brown & Sander 2007; Tijaja 2010).

Generally, the findings on both the strength of vertical and horizontal collaborative relationships in this study can be classified as unique in the sense that they have corroborated the data patterns from the quantitative data, as evidenced by the qualitative data and validated by the observatory field data. The data patterns revealed a close fit between theory and data, which makes the findings stronger and better grounded in the GVC framework (Gereffi et al., 2005), Cluster theory (Porter, 1998; 2007) and Transactional cost theory (Williamson, 1975; 1998). Combinations of these three theoretical frameworks provide relevant data and features for understanding industry evolution and competitiveness. For instance, GVC proponents such as Humphrey and Schimtz (2001) and Schmitz (2005) argued that a combination of technical and investment support in highly governed chains explains how relatively underdeveloped regions become major export producers in a short period of time. They cited the example of the Brazilian shoe industry in the 1970s and the Vietnamese garment industry in the late 1990s. A similar observation was made by Chivaka (2003) in his study of the textile and garment supply chain in South Africa. He found that companies that had closer collaboration in training and assistance attained a higher diffusion of skills in a shorter time to achieve supply chain efficiency levels. This scenario is a true reflection of Uganda's evolving commercial forestry sector, which enjoys both technical and financial support from development agencies and producer associations with a purpose of building production capabilities amongst primary producers.

Other GVC proponents such as, Humphrey and Schmitz (2001), Schmitz (2006) argue that despite the fact that highly governed structures contribute to fast acquisition of production capabilities, they also create barriers for functional upgrading and/or investments in forward linkages (acquisition of design & marketing capabilities). This is because the lead firms have to protect their core capabilities such as acquisition of design & marketing capabilities from competition, in order to sustain earning higher rents. The findings of this study revealed a contrary view by suggesting that lead firms also create barriers in backward linkages by controlling the diffusion of knowledge and skills transfer not directly to primary producers, but through use of contractors. This strategy enables the miller(s) to continuously earn higher rents by offering; low commodity prices, inputs and services at high prices to the primary producers due to existing weak supply base production capabilities, given that the growers investment stake is mainly land provision. This scenario happens to be the case with Uganda's commercial sugarcane industry. Therefore, this finding can be classified as a major contribution to the emerging GVC theoretical framework (see Gereffi et al.,2005), with respect to lead firms' control of the diffusion of supply production capabilities, for sustained earning of strategic rents.

In addition, the proponents of the cluster theoretical framework argue that diffusion of production capabilities are not only limited to GVC participants, but there is also knowledge and skills 'spill over' in a geographical area and/or localities of business operations (UNIDO, 2015; WB, 2013; Maya-Ambia 2011; Aznar-Sanchez & Galdeano-Gomez 2011; Guiliani, Pietrobelli & Rabellotii 2005; Meyer-Stamer et al., 2003; Navdi & Halder 2002). They argued that impact of knowledge and skills 'spill-over' accounts for the rise of entrepreneurship in various forms such as; functional upgrading, new entrants in the existing clusters and value

chains, and the start of new parallel competitive value chains. This potential is available especially in Uganda's commercial forestry sector entrepreneurs, only if other commodities can have a ready market when produced on a large scale.

Therefore, at the level of micro VC enterprise comparative analysis, the findings revealed no significant performance differences between HPEs, MPEs and LPEs regarding to inputs support, knowledge and skills acquisition for building production capabilities to enhance productivity gains and ultimately competitiveness of the value chains. This finding shows that all players have similar access to resources and operate in a similar environment. This finding confirmed the observed hypothetical question which states that; despite entrepreneurs being exposed to similar environments and having access to the same resources, then what factors could account for performance differences between successful entrepreneurs and failing or struggling entrepreneurs? (Njeru, Bwisa & Kihoro, 2012). The answer lies in the theory of internality-externality perceptions, which has been discussed in sub-theme 1 above.

While at the level of meso and macro VC sector comparative analysis, strong significant performance differences emerged between the sugarcane and forestry sectors in Uganda. The sugarcane sector exhibits high investment asset specificity in vertical linkages between primary producers and millers. The quantitative findings suggested strong collaborative vertical linkages for building supplier production capabilities. However, a nuanced view of the qualitative data points to the existence of production capabilities in the vertical linkages, but

residing in the use of contractors rather than the sugarcane growers themselves. This finding confirms that the growers are heavily dependent on the millers and contractors employed by the millers to offer services to the contracted growers. This level of high dependency has left most of the growers unable to develop production capabilities in the sugarcane sector.

Further, the growers were also vulnerable to coordination transaction costs and opportunistic behavior, which was manifested in the form of exploitation at the weigh-bridges, coupled with receipt of low cane prices in comparison to the forestry sector entrepreneurs.

On the other hand, the forestry sector growers had been able to develop production capabilities. This was evidenced by high investment asset specificity in the human resources development through direct access to both technical and financial support. The existence of a national forestry growers' association not only strengthens cluster vertical and horizontal linkages, but also served as a powerful policy-lobbying tool for the sector development. Surprisingly, apart from access to inputs and services from millers through contractors, the sugarcane sector players lack a national unifying body that could step in to lobby favourable policies and also provide technical training direct to the primary producers.

7.8 Summary

The research findings have demonstrated that business competitive success and/or failure is a result of perceptions linked to internal-external entrepreneurial behavioral characteristics. The results also revealed that institutional quality matters for competitiveness of agri-business value chains. In particular, the prevailing institutional environment was found to determine

equitable wealth distribution and allocation of talent between productive innovative investment activities and un-productive or predatory rent-seeking investment activities. The study findings also revealed that development of production standards manuals acted as a communication tools thus guiding primary producers in setting up business farms/firms that were found to achieve productivity gains for business growth and ultimately competitiveness. Commodity grading based upon price was found to improve farm/firm productivity gains and ultimately business competitiveness. Finally, transfer of knowledge, skills and technology i.e., production capabilities was found to have not occurred directly to primary producers but through contractors employed by millers, save for the forestry sector which had a direct transfer of production capabilities directly to primary producers. The next chapter eight presents a summary of the findings, conclusions and provides key insights emerging from the study.

CHAPTER EIGHT: SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

This chapter presents a summary of key research findings, theoretical and methodological contributions, policy and industry practices contributions, conclusion, study limitations and areas for further research. The key findings of this study are derived from the work in this thesis and publication research papers derived from data findings of this study. The key findings are presented at micro level VC enterprise comparative analysis, i.e., entrepreneurs or firms participating in the value chains, and at meso & macro level VC sector analysis, i.e., examining the broad value chain inclusive of policies and regulations governing the value chain sector as a whole. The research papers contributing to key results of this study are:

(1) Mugabira M and Chivaka R (2016) Value chain analysis: critical success factors for competitiveness in Uganda's commercial sugarcane industry. International Sugar Journal, vol 118 (1405): 52-59; .

(2) Mugabira M., Chivaka R., Dickens Sande D B & Kavuma D, Key Success Factors For Commercial Forestry & Sugar Value Chains In Uganda: A Comparative Study Of Linking Producers To Markets. Journal of Forestry, Vol. 3, No. 6, PP. 1-12;

(3) Mugabira M and Chivaka R (2016) Productive, Unproductive and/or Predatory Entrepreneur-ship: A Value-Chain Analysis of Institutional Reforms in Uganda's Sugarcane Industry with key insights from South Africa and Kenya. Proceedings of the International Society of Sugar Cane Technologists (ISSCT) Volume 29, 2016.

(4) Mugabira M and Chivaka R (2017) Collaboration in Agri-Value Chains: Building Supplier Production Capabilities for Productivity Gains. Book Chapter, in the forth-coming Agri-Value Chains Publication, Croatia.

8.2 Major-theme: Entrepreneur's behavior and competitive performance

The major research question was: How do entrepreneurs' behavioural practices determine the competitive performance of agri-business enterprises undertaking GVC participation in Uganda?. The major theme was investigated under five sub-themes below:

8.2.1 Sub-theme 1: Critical success factors (CSFS) for value chain competitiveness

Research question 1: Why and how do perceptions of CSFs for competitiveness determine performance differences amongst high, medium and low producers and between VC sectors?

Research question 2: How are producers' competitiveness expectations compatible with market expectations amongst high, medium and low producers and between VC sectors?

At the level of micro VC enterprise comparative analysis; in answering the questions of critical success factors determining performance differences between high, medium and low performing entrepreneurs, **and compatibility of market expectations with producer expectations, the key findings revealed that:**

- The high performing entrepreneurs (HPEs) attributed their success to internal environmental factors. They emphasized critical success factors (CSFs) which were mainly entrepreneurial traits such as; personal involvement, being passionate, technical

knowledge, timely application of agronomical practices, prompt payment of workers, and commitment. These are factors under entrepreneur's control, which can be developed and nurtured as a business culture resulting into firm's competencies and capabilities for business high productivity and competitiveness.

- The medium performing entrepreneurs (MPEs) and low performing entrepreneurs (LPEs) associated their success to external environmental factors. They emphasized CSFs such as; rainfalls, good climate, prompt service delivery by miller, as source of their business competitiveness. These are factors outside entrepreneur's control, which cannot be developed and nurtured for business success resulting into low productivity and competitiveness.
- The HPEs were found to be more responsive in complying with market/buyer expectations compared to both MPEs and LPEs. This finding strengthened the above finding on perceptions of internal environmental factors as being source of business success and achieving desired productivity gains.

While at the level of VC sector comparative analysis; with respect to answering the question critical success factors determining performance differences between VC sectors, and compatibility of market expectations with producer expectations, the key findings revealed that:

- Entrepreneurial traits such as personal involvement, being passionate was rated as a key success factor for business competitiveness by respondents in both sugarcane and forestry value chain sector.

- Cash flow - a financial indicator, and productivity practices such as reliability in quality, were considered more as key success factors for business competitiveness in the sugarcane sector than the forestry sector. This possibly could be attributed to the sugarcane crop as being more sensitive to weeds and susceptible to perishability, thus requiring regular cash flow for maintenance in comparison to the forestry crop.

- Sugarcane producers generally had a clear grasp of the productivity success factors that were aligned with market expectations compared to the forestry sector producers. Industry maturity was likely to be one of the major factors that could offer plausible explanations for this performance difference. This was because sugarcane took a shorter time to maturity i.e., 18-20 months to market, thus increasing exposure of cane growers to market requirements compared to forestry that required 8 years as maturity period to enter the market. Another factor could be due to the nature of sugarcane being a perishable commodity, thus requiring tight delivery schedules to the sugar mill in order to maintain desired quality attributes and quantities.

8.2.2 Sub theme 2: Equitable value chain sharing (miller-producer equitability)

Research question 3: How is the equitable value chain sharing of proceeds perceived as a challenge for competitive success amongst VC participants and between VC sectors, thus creating winners and losers?

At the level of micro VC enterprise comparative analysis; in answering the question of performance differences between high, medium and low performing entrepreneurs, **the key findings revealed that:**

- There were no significant perceptional differences among all the entrepreneurs (HPEs, MPEs and LPEs) regarding equitable sharing of value chain proceeds between the millers and producers. The findings suggests that inequitable sharing of proceeds between millers and growers is more of an external environment factor impacting all industry players equally and therefore does not explain performance differences among high, medium and low performing enterprises.

While at the level of meso and macro VC sector comparative analysis; in answering the question of performance differences between VC sectors, the research findings revealed the following:

- The forestry sector was fairly equitable in wealth distribution compared to the sugarcane sector. The finding suggests that the perceived difference in inequitable wealth distribution between the two VC sectors was due to existing chain governance structures. The cane producers' were found heavily reliant on miller's loan facilities,

which attracted interest, coupled with a reliance on contractors deployed by millers to growers farms, which exposed cane producers to exploitation. Therefore, the dependency of cane producers upon millers suggested that it was a captive value chain governance structure, meaning that producers are locked-up in the chain with powers concentrated in the hands of millers. This was found to be in contrast with the forestry sector, in which the producers were not operating in a captive value chain and therefore exercised some leverage power.

- An analysis of the revenue earning in the forestry sector with particular reference to eucalyptus revealed that Ugandan growers were fairly competitive with their counter-parts in South Africa. In South Africa growers earned approximately 25% with millers obtaining a mark-up profit of 15-20% (DFID, 2005), while in Uganda growers earned approximately 20% with millers obtaining a mark-up profit of 20-25% of the value of eucalyptus poles.
- Ugandan cane growers' earnings in comparison to cane growers from other countries suggested dire straits. An analysis of the sugar revenue sharing formula in Uganda revealed that producers and/or farmers earn 35% and millers 65% as per the existing cane production contracts. This comparison revealed that Ugandan sugarcane farmers were among the most exploited in the region and possibly worldwide, as the literature shows that the share of the sugar value to the beet grower is usually in a range of 40-60%, and of 50 to over 70% to the cane grower (WABCG, 2015). This level of inequity possibly explains why the vertically integrated Ugandan millers (backward integration) into the farmer part of the value chain can afford to produce their cane hundreds of kilometers away from their mills as they can 'subsidize' the potential loss of their farms

from the huge margins they earn as millers. Cane farmers in Uganda, who depend entirely on outsourcing the milling of their cane, being even a short distance from the miller can render their businesses unprofitable, as they are currently not on the 'sweet side' of the cane payment system.

- Also, the inequitable division of proceeds between millers and growers appears to explain the observed low attractiveness of commercial growers in the sugarcane sector (20% - approximately 100 registered growers) compared to the forestry sector (80% - approximately 400 registered growers), possibly due to low profitability. The sugarcane sector was dominated by small-scale growers (less than 8 hectares) & few medium growers (less than 25 hectares), as they could afford to subsidize labour costs and some other farm activities with own family labour.

- The inequitable division of proceeds between millers and growers appears to offer plausible explanations for the observed performance differences in achieving industry productivity benchmarks between sugarcane and forestry sector primary producers. Study results indicated that only 18% of the farmers achieved the desired industry competitive output of at least 100 t/ha from their cane fields, implying that 82% of the growers were producing below expected industry productivity output. This was in contrast to the forestry sector were study results indicated that 41.3% of the farmers achieved the desired industry performance targets, suggesting that only 58.7% of the growers performed below expected performance targets.

8.2.3 Sub-theme 3: Entrepreneurial alertness and regulatory regime

Research question 4: How does entrepreneurial alertness explain enterprise and VC sector performance differences, with possibilities for the shaping and re-shaping of governance structures?

At the level of micro VC enterprise comparative analysis; in answering the question of how entrepreneurial alertness influences performance differences between high, medium and low performing entrepreneurs and re-shaping the value chain governance structures, **the key findings were arranged as revealed below:**

- Findings of the study revealed that factor production endowments, ease of doing business and grant incentives did not explain performance differences between successful and unsuccessful entrepreneur's businesses. This finding suggests that most entrepreneurs' posses entrepreneurial alertness 'instincts' with respect to availability of favorable environmental factors enabling business start-ups and growth. Therefore, entrepreneurial alertness could not clearly explain the distinction between high performing entrepreneurs and low performing entrepreneurs in the context of Uganda found to have a high level of entrepreneurial talent (GEM 2014).
- Process VC upgrading such as investing in farm machinery and increasing yields per unit area, was generally considered to be an investment opportunity by the HPEs, MPEs and LPEs, suggesting no differences in entrepreneurial talent.

- Generational strategy such as having in place a succession plan was perceived as an investment opportunity by HPEs and MPEs while LPEs considered it as an investment constraint.
- Functional VC upgrading, such as investing in value-addition plants was perceived as an investment constraint by HPEs, MPEs and LPEs. This finding suggested that most of these businesses could not capture higher rents associated with value adding activities.
- Business formalization such as business registration was generally considered to be an investment constraint by HPEs, MPEs and LPEs. Taxation was identified as the main factor hindering the process of entrepreneurial businesses to graduate from the informal to the formal economy.

Generally these findings revealed that there was no clear cut competitiveness performance edge that distinguishes high performing enterprises from low performing enterprises with respect to entrepreneurial alertness 'instincts' for perceiving business opportunities in the environment.

While at the level of meso and macro VC sector comparative analysis; in answering the question of how entrepreneurial alertness may explain performance differences between VC sectors and the possibilities for shaping and re-shaping the chain governance structures, the research findings revealed the following:

- Grant incentives were found to be a major pull factor for entrepreneurial investment activities in the forestry sector.

- Ease of doing business factors such as provision of inputs and guaranteed market by the miller/buyer were found to be the major pull factors for entrepreneurial investment activities in the sugarcane sector.
- In both sectors, that is sugarcane and forestry value chains respondents perceived factor production endowments similar in attracting entrepreneurial activities. This meant that factor production endowments in geographical areas or clusters such as availability of favourable climate such as rainfall, and a free flow of market information based on 'hearsay' that there are high returns on investment, were found to be the key drivers for entrepreneurial activities in both the sugarcane and forestry sectors.

- In the sugarcane sector VC process upgrading (e.g., investing in farm machinery and increased farm output) was the strategy being pursued possibly with a purpose of transiting from captive value chains characterized with being 'price takers' to relational or modular value chains that increases primary producer's leverage negotiation powers.
- In the forestry sector business formalization (business registration) strategy was being pursued by the growers possibly to enable their businesses to shift from the informal to the formal economy. This is because businesses in the formal economy enjoy credit facilities from commercial banking institutions that can be used for plantation maintenance costs.
- None of the sectors (sugarcane and forestry) had intentions of pursuing the lucrative VC functional upgrading i.e., investing in value addition plants, an investment strategy that could increase earnings and thus reduce exploitative tendencies, especially evidenced in the sugarcane sector. The low response for VC functional upgrading could possibly be

attributed to the high capital investment financing requirements for setting-up value addition plants.

- Miller's in the sugarcane value chain had investment plans for by-products upgrading such as utilizing sugarcane bagasse for power production. The quest for power in the country for industrialization presented an investment opportunity as it may shift the VC from sugar mills (sugar as core business) to power generation plants (power from baggase as core business) resulting into chain up-grading.
- Although the growers in the forestry sector also considered functional VC upgrading as a constraint, the development partners had plans for rolling out SPGS III phase that could avail cost share production grants for functional VC upgrading either through individual access or through joint action ownership of the facilities.

Research question 5: How does institutional quality explain the emergence of the productive, unproductive and/or predatory behaviours reflected in the competitive success or failure of enterprises and VC sectors?

At the level of micro VC enterprise comparative analysis; in answering the research question of how institutional quality explains performance differences between high, medium and low performing entrepreneurs, the research findings revealed that:

- There were no performance differences observed among HPEs, MPEs and LPEs, implying that the regulatory environment had a similar effect on all the entrepreneurs.

However, at the level of meso and macro VC sector comparative analysis, with respect to performance differences between sugarcane and forestry value chain sectors, the study findings indicated that the regulatory framework had profound effects on the sugarcane value chain sector compared to the forestry value chain sector with the following findings:

- Generally the study findings revealed that institutional quality determine the reward structure in the economy, which in turn influences the allocation of entrepreneurial talent between productive investment activities such as innovation and largely unproductive or predatory investment activities such as rent-seeking behaviour, that were prevalent in the sugarcane sector compared to the forestry sector.
- Rent-seeking behaviors were validated with the rise in application for cane milling licenses with the coming into effect of the sugar zoning policy enacted in 2010 by the government of Uganda. Traditionally Uganda had three major sugar mills, yet just before the zoning policy two other medium mills had obtained licenses. Immediately after, the enactment of the zoning policy the number of total licensed sugar mills rose from 6 to 26, representing more than 300% growth, but less than 50% to-date have been established. This implied that a number of market speculators obtained monopoly licenses thus granting them property rights, possibly with a purpose of selling them at exorbitant prices to potential prospective investors in the future; the way it happened with some of Uganda's privatized public enterprises that were also subjected to asset stripping (Kibikyo, 2011; Tangri and Mwenda, 2013).

- Further, the zoning policy was found to have been abused by millers through obtaining multiple licenses in the same region as a strategy of creating a wider 'buffer' area that hindered new players entering the market. This strategy enabled the miller(s) to earn strategic rents not by innovation but through rent-seeking entrepreneurial behaviors due to monopsony.
- The Ugandan sugar industry had no governing body and the proposed governing body in the Draft Sugar Bill 2015 had gaps in power distribution & equitable representation of growers & millers on the governance board for effective meaningful-decision making that fosters a sustainable industry productivity gains and competitiveness.
- Power imbalance among the actors impacts on productivity within value chains in that it creates inequitable distribution of benefits, which in turn dis-incentivizes the less powerful actors to be productive.

- It was also evident that ring-fencing policies offered to sugar mills in Uganda provides a number of challenges to the growth of the sugar sector in Uganda described below:

❖ Delays in harvesting out-growers cane beyond the stipulated time frame of 18-20 months (UNSP 2010);

❖ Uncompetitive cane prices with margins of 25% differential between regions with fair concentration of mills than those with a single miller;

❖ Inadequate mill capacity of 4500 tonnes cane per day (USMA 2015) compared to an area's production potential resulting in overgrown cane of approximately 7,000 ha (700,000t) - which caused farmers to petition the government for the waiver of

monopoly policies to enable the establishment of another mill of approximately 3,500 tonnes cane per day;

- ❖ During dry spells out-growers lost a lot of cane due to fires when cane could not be harvested timely and delivered to the mill due to inadequate mill capacity coupled with haulage and mechanical harvesting inadequacies. Thus farmers end up losing investment funds and revenue without compensation from the government or miller(s) responsible for enacting uncompetitive policies. As an example in the 2014/2015 financial year, farmers lost 2,500 ha (approximately 250,000 t) to fire with a potential revenue of UGX20 billion, equivalent to approximately USD 5,000,000. As a result, the Ugandan government lost gross revenue from milled sugar equivalent to USD 22,000,000, of which USD 4,000,000 alone accounts for value added taxes to the government.

- The forestry sector in Uganda had MNCs governed by the FSC legislative framework and therefore they introduced better value chain industry practices as they were bound to comply with FSC requirements for continued certification to enhance their credibility especially in export markets and their countries of operation. Unfortunately, Uganda's sugarcane sector had no single MNC to act as an industry leader in introducing best value chain industry practices.
- Despite the significant performance differences between sugarcane and forestry sectors as evidenced in the findings above, it was surprising that respondents in the forestry sector were found in agreement with the sugarcane sector as they both advocated for the establishment of a sound regulatory environment and governing boards that could enforce compliance with the rules of the game for enhancing productivity gains and

ultimately competitiveness. This paradox emerged due to different value chain practices between the pole market and the plywood market within the forestry sector. Productive entrepreneurial behavior was observed in the pole market while the plywood market exhibited unproductive entrepreneurial behavior, characterized by cheating weighing scales, absence of contractual orders and abrupt price changes among others. The observed differences in the value chain practices, was because the pole market had MNCs subscribing to the FSC regulatory framework, while the plywood market was dominated by Chinese firms that did not subscribe to the FSC regulatory framework. It was therefore, the inappropriate value chain practices in the plywood market that influenced respondents in the forestry sector to advocate for industry regulation as was the case with the sugarcane sector.

8.2.4 Sub-theme 4: Standards for market access

Research question 6: How do the perceptions of compliance with standards for market access explain the performance differences amongst high, medium and low producers and between VC sectors?

At the level of micro VC enterprise comparative analysis; in answering the question of how do perceptions of compliance with standards for market access explain performance differences amongst high, medium and low producers, the research findings revealed that:

- There were no significant performance differences between high, medium and low producers, with respect to access to production standards and perceiving industry failure to apply a pricing per grading system and implementation of certification initiatives as major challenges for enterprise business competiveness in the value chains. Therefore, this finding implied that compliance with industry standards was more of an external environmental factor having similar effects on all entrepreneurs' business competitiveness.

While at the level of meso and macro VC sector comparative analysis; strong significant performance differences emerged between the sugarcane and forestry sector in Uganda as follows:

- The forestry sector had clearly well documented production standards availed to growers through standards manuals which acted as a communication tool to facilitate improved productivity and ultimately farm level competitiveness. On the other hand, the sugarcane sector had no documented production standards availed to the growers and the mechanisms of production were mainly communicated through seminars to growers.
- The forestry sector growers were also exposed to improved business farming and processing techniques along the entire value chain through both foreign study tours and local field tours. These study tours improved skills, knowledge and information sharing and also exposed the growers to adopt appropriate technologies relevant to their businesses. Unfortunately, the sugarcane sector lacked these platforms.

- The forestry sector practiced a rudimentary pricing per grading system, which was found to be an incentive for industry competitiveness if it could be well-developed and standardized like it was in South Africa. On the other hand, the sugarcane sector had no pricing per grading system which was found as a demotivating factor for better performance.
- The forestry sector was found to be laying a foundation for certification initiatives as it practiced training programs coupled with an incentivized bonus payment system that enhances traceability and also improves compliance to standards. This was contrary to the sugarcane sector that relied on stick and carrot approach, i.e., threats for contract termination and soft loan advances.

8.2.5 Sub- theme 5: Collaboration in vertical and horizontal linkages for diffusion of production capabilities

Research question 7: How does vertical and horizontal collaboration for the diffusion of supplier production capabilities explain the performance differences amongst VC participants and between VC sectors?

At the level of micro VC enterprise comparative analysis; in answering the question of how does vertical and horizontal collaboration for diffusion of production capabilities explain performance differences amongst VC participants? The following were the findings:

Vertical collaborative relationships; Findings of the study generally revealed weaker collaborative relationships along vertical linkages for diffusion of knowledge, skills and inputs support for building production capabilities among primary producers. The millers were found to prefer either use of contractors or only to purchase final quality commodities. This finding suggested that the achieved productivity gains that distinguished HPEs from both MPEs and LPEs as found out in results under sub-theme 1 above, could have been attributed to own entrepreneur's learning or acquiring from other sources and not millers. Findings of the study also revealed that vulnerability to transactional costs and opportunistic behaviors were perceived to be generally at low levels between millers and primary producers, and did not account for performance differences between HPEs, MPEs and LPEs.

Horizontal collaborative relationships; Findings of the study revealed no performance differences between HPEs, MPEs and LPEs as a result of access to investment asset specificity such as transfer of knowledge, skills and inputs support for building production capabilities. Findings also revealed low levels of transactional costs in business dealings, suggesting that they could not account for performance differences among HPEs, MPEs and LPEs. Some level of vulnerability to opportunistic behaviors manifested among LPEs and MPEs business dealings, therefore rendering support in explaining performance differences between HPEs vis a vis MPEs and LPEs.

However, at the level of meso and macro VC sector analysis, strong significant performance differences emerged between the sugarcane and forestry sectors in Uganda.

Vertical collaborative relationships;

- The sugarcane sector exhibited high investment asset specificity in vertical linkages between primary producers and millers. This was evidenced by quantitative data which suggested strong collaborative vertical linkages for building supplier production capabilities. However, a nuanced view of the qualitative data pointed to the existence of production capabilities in the vertical linkages, but residing in the use of contractors rather than the cane growers themselves. This finding suggested that the growers were heavily dependent on the millers and contractors employed by the millers to offer services to the contracted growers. This level of high dependency of growers upon millers partly had left most of the growers unable to develop production capabilities in the Ugandan sugarcane sector.
- Further, the growers were found vulnerable to coordination transaction costs and opportunistic behavior, which manifested in the form of lack of transparency at the weigh-bridges, absence of grading system for cane supplied, and coupled with receipt of low cane prices in comparison to the forestry sector entrepreneurs. These findings confirms that the sugarcane sector was structured as a captive value chain, which rendered growers having less leverage negotiation market powers as evidenced in sub-theme 2 and 3 study results above.

Horizontal collaborative relationships;

- Quantitative data revealed a stronger collaborative relationship among producers and/or producer support agencies for inputs access, knowledge and skills transfer in the forestry sector than the sugarcane sector. This finding was corroborated by qualitative

data and validated by observatory field data which confirmed that the transfer of knowledge, skills and inputs support occurred directly to forestry primary producers through both foreign and local exposure learning platforms, thus resulting into building production capabilities.

- Quantitative data revealed suggestive evidence of minimum occurrence of transactional costs among producers in the forestry sector than the sugarcane sector. This quantitative finding was validated by the qualitative data finding which suggested occurrence of transactional costs citing an example of replacing labor force taken by another grower without the consent of the labor force owner.
- Findings of the study by quantitative and confirmed by qualitative data revealed that opportunistic behaviors manifestations were not quite rampart among producers in both the forestry and sugarcane sectors.
- The forestry sector players had a national umbrella organization. The existence of a national forestry growers' association not only strengthened cluster vertical and horizontal linkages, but also served as a powerful policy-lobbying tool for the sector development. Surprisingly, apart from access to inputs and services from millers through contractors, the sugarcane sector players lack a national unifying body that could step in to lobby favorable policies and also provide technical training directly to the primary producers.
- Results of the study revealed a high statistically significant very strong collaborative relationship between producers and producer support agencies in the forestry sector, as compared to the sugarcane sector. This finding suggested that the transfer of knowledge, skills and inputs support that occurred directly to growers was a result of

intervention by development partner agencies that provided both technical and financial support in the Ugandan forestry value chain sector.

8.3 Theoretical and methodological contributions:

Theoretically and methodologically this study has brought into insight new research frontiers:

- This research revealed that what distinguish successful entrepreneurs from unsuccessful entrepreneurs are their own perceptions with respect to their beliefs in internality-externality environmental factors. This finding renders support to a belief in internal-external locus of control behavioral theory (Rotter, 1966). The theory suggests that people with internal locus of control of reinforcements believe that personal effort is the primary determinant of their outcomes and success, while those with external locus of control of reinforcements believe in external events as determinant of their outcomes & success. This finding of internality-externality is unique to this study in the sense that generally it corroborated data patterns from quantitative data, as evidenced from qualitative data and validated by observatory field data. Further, a close fit between theory and data makes this finding stronger and better grounded in the theory of entrepreneurship behavior (Gatner, 1989; Baumol 1990) and ultimately to our understanding of entrepreneur's behavior in the emerging discipline of GVCs (Gereffi et al, 2005).

- Methodologically, this study has advanced the justification for application of multiple research instruments, for strengthening research findings. Quantitative results indicated that there was a fit in perceptions regarding critical success factors among high,

medium and low performing enterprises. Qualitative results on the other hand offered both corroboratory for HPE's and contrasting views for MPE's and LPE's. The observed contrast between quantitative and qualitative data suggests that when a quantitative tool with critical success factors is given to the respondents, they are subconsciously aware of the CSFs that account for business competitiveness. Therefore, the respondents tend to tick the items positively regardless of whether they have an internal-external locus of control of reinforcements.

- Findings of the study revealed no clear comparative performance cutting edge between successful entrepreneurs and unsuccessful entrepreneurs with respect to entrepreneurial alertness. This finding is a paradox in the discipline of entrepreneurship, which relates entrepreneurial alertness with business success. The context explaining this paradox could be attributed to Uganda having a high level of entrepreneurial talent (GEM 2014). This finding rendered support to the global entrepreneurship monitoring survey data frameworks which ranked Uganda 28.1% as the top most entrepreneurial country in the world, followed by Thailand 16.7% and Brazil 13.8% (GEM Report 2014). Interestingly, the USA was found to be lagging far behind with a score of 4.3%, even though the USA is perceived in everybody's mind as being the most entrepreneurial in the world. The GEM Report also rated Uganda's entrepreneurs as top in the world for perceived opportunities 76.9%, perceived capabilities 84.9% and fear of failure 12.6%, all measures of entrepreneurial alertness. Therefore, entrepreneurial alertness does not offer plausible explanations between successful entrepreneurs and unsuccessful entrepreneurs in environments of high level entrepreneurial talent.

- Ugandan entrepreneurs were generally alert to seizing and exploiting opportunities available in the environment, and therefore they could be classified as opportunity-driven entrepreneurs and not necessity-driven entrepreneurs. This finding also renders support to the annual global entrepreneurship monitoring survey data frameworks published by GEM Reports, which rank countries based on their stage of economic development, i.e. factor-driven economies, efficiency-driven economies or innovation-driven economies. According to the 2014 GEM Report, using measures of necessity-driven entrepreneurship vs. opportunity-driven entrepreneurship revealed the following results with respect to opportunity-driven entrepreneurship measures. Uganda, which was classified as a factor-driven economy, was ranked top 80.8% in this category, competing favorably with the top efficiency-driven economies of Malaysia 82.5% and Thailand 80.9%, as well as innovation-driven economies such as the USA 81.5%, UK 83.5%, Sweden (84.2%) and France (82%). Therefore, Uganda's entrepreneurs being classified as opportunity-driven rather than necessity-driven demystify the entrepreneurship behavioral orthodox views which perceive that the level of a country's development is commensurate with the stage of its entrepreneurship.
- Findings revealed a general agreement of the need for regulation in both sectors yet it was only the sugarcane sector that experienced inequalities in wealth distribution mainly due to monopolistic policies. Productive entrepreneurial behaviour was observed in the pole market while the plywood market exhibited unproductive entrepreneurial behavior, characterized by cheating weighing scales, absence of contractual orders and abrupt price changes among others. The observed differences in the value chain practices, was because the pole market had MNCs subscribing to the

FSC regulatory framework, while the plywood market was dominated by Chinese firms that did not subscribe to the FSC regulatory framework. It was therefore, the inappropriate value chain practices in the plywood market that influenced respondents in the forestry sector to advocate for industry regulation as was the case with the sugarcane sector. Methodologically, this finding was classified as unique to this study in the sense that generally it resolved conflicting data and corroborated data patterns from quantitative data, as evidenced by the qualitative data and validated by the observatory field data. Therefore, this finding was a major contribution to the advancement of the use of the case study approach. The application of the case study approach enabled the use of within case analysis and cross-case analysis to highlight and harmonize contradicting data, which could not possibly be achieved with other research design approaches. Further, a close fit between theory and the resolving of conflicting data made this finding stronger and better grounded in the debate of new institutional theory (North, 1990; Williamson, 1998).

- The finding of equitable value sharing as a result of equality in numerical representation of key stakeholders in exercising governance power on the national regulatory bodies as key value chain governance drivers was a departure from the GVC theoretical framework that mainly considers powerful lead firms as the key governance value chain drivers. This finding can be regarded as a major contribution to the on-going globalization debate of addressing inequitable wealth distribution currently re-shaping the geo-politics of Brexit, Trumpism, and Italy referendum. As per now France and Germany seem to be trending the same direction because citizens have

continuously witnessed dwindling of incomes and loss of jobs due to 'greedy' corporate firms, investors and entrepreneurs. Therefore, in the GVC theoretical framework, this finding suggests that in developing and/or emerging economies governments have a role to play in markets to achieve equitable wealth distribution resulting into productivity gains and ultimately competitiveness of the value chains.

- The dominant theoretical argument within the GVC discipline has been that while highly governed structures contribute to fast acquisition of production capabilities, they can also create barriers for functional upgrading and/or investments in forward linkages (Humphrey and Schmitz, 2001; Schmitz, 2006). This is because the lead firms protect their core capabilities such as acquisition of design & marketing capabilities from competition, in order to sustain earning higher rents. The findings in this study added another perspective by showing that the lead firms created barriers in backward linkages by controlling the diffusion of knowledge and skills transfer not directly to primary producers, but through use of contractors. This strategy enabled the miller(s) to continuously earn higher rents by offering; low commodity prices, inputs and services at high prices to the primary producers through maintenance of weak supplier production capabilities. Therefore, this finding can be classified as a major contribution to the emerging GVC theoretical framework (see Gereffi et al., 2005), with respect to lead firms' control of the diffusion knowledge and skills for building supply production capabilities in backward linkages, with intent for sustained earning of strategic rents.

- GVC and cluster approach studies show that a combination of technical and investment (financial) support in highly governed chains explains how relatively underdeveloped regions become major export producers in a short period of time (Humphrey & Schimtz, 2001; Schmitz, 2005). Further, proponents of the cluster approaches argue that diffusion of production capabilities are not only limited to GVC participants, but there is also knowledge and skills 'spill over' in a geographical area and/or localities of business operations (UNIDO, 2015; WB, 2013; Maya-Ambia 2011; Aznar-Sanchez & Galdeano-Gomez 2011; Guiliani, Pietrobelli & Rabellotii 2005; Meyer-Stamer et al., 2003; Navdi & Halder 2002). This theoretical assumption was found relevant and a true reflection of Uganda's emerging commercial forestry sector. Therefore, this finding can be classified as unique in the sense that this study corroborated the data patterns from the quantitative data, as evidenced by the qualitative data and validated by the observatory field data in support of the GVC and cluster approach studies above. The data patterns of this study revealed a close fit between theory and data, which made the findings stronger and better, grounded in the GVC framework (Gereffi et al., 2005), cluster theory (Porter, 1998; 2007) and transactional cost theory (Williamson, 1975; 1998). A combinations in the use of these three theoretical frameworks provided relevant data and features for understanding industry evolutions, productivity gains, competitiveness and thus a possible path of Ugandan agri-businesses to penetrate export markets.

Table 8.1: Summary of thesis theoretical contribution

Theory / Analysis	Contribution
GVC theoretical framework	The finding of equitable value sharing as a result of equality in numerical representation of key stakeholders in exercising governance power on the national regulatory bodies as key value chain governance drivers was a departure from the GVC theoretical framework that mainly considers powerful lead firms as the key governance value chain drivers. The dominant theoretical argument within the GVC discipline has been that while highly governed structures contribute to fast acquisition of production capabilities, they can also create barriers for functional upgrading and/or investments in forward linkages, in order to sustain earning higher rents. The findings in this study added another perspective by showing that the lead firms created barriers in backward linkages by controlling the diffusion of knowledge and skills transfer not directly to primary producers, but through use of contractors, and thus able to earn strategic rents due to a weak supply base. The thesis investigated entrepreneurs 'primary producers' a class that is hardly investigated with most GVC studies as mostly they focus on the meso and macro environment vc players such as MNCs.
Other theoretical frameworks: Entrepreneurship behavioral approaches	GEM Reports, rank countries based on their stage of economic development, i.e. factor-driven economies, efficiency-driven economies or innovation-driven

Theory / Analysis	Contribution
	economies. Uganda, is classified as a factor-driven economy, competes favorably with the top efficiency-driven economies, as well as innovation-driven economies. Therefore, Uganda's entrepreneurs being classified as opportunity-driven rather than necessity-driven demystify the entrepreneurship behavioral orthodox views which perceive that the level of a country's development is commensurate with the stage of a country's entrepreneurship.
New institutional theoretical framework	New institutional theory approach is maianly used in business schools in analyzing how and why firms and individuals conform or resist institutional change. This thesis has applied the institutional theory from the organizational behavior perspective in analyzing entrepreneurial perceptions, thus a departure from the common norm in the business schools.
Analytical contribution	The thesis applied within case analysis and cross-case pattern analysis an approach that enabled data corroboration and resolving conflicting data, and thus strengthening study results. The application of this type of case study approach is not common with GVC studies.
Uniqueness of the work	The thesis has been able to translate academic work into policy formulation and law enactment especially with respect to Uganda Sugar Bill 2016 before Parliament – The Republic of Uganda. The outcome is a major contribution to society and national economy in terms of creating an enabling investment climate and business

Theory / Analysis	Contribution
	environment that spurs job creation, productivity and fair share of wealth distribution.
Similarity with other works	GVC and cluster approach studies show that a combination of technical and investment support in highly governed chains explains how relatively underdeveloped regions become major export producers in a short period of time. Further, proponents of the cluster approaches argue that diffusion of production capabilities are not only limited to GVC participants, but there is also knowledge and skills 'spill over' in a geographical area and/or localities of business operations. This theoretical assumption was found relevant and a true reflection Uganda's emerging commercial forestry sector, which was a subject matter under this thesis. The findings of this study has demonstrated that sound institutional quality matters as envisaged by the ne institutional theoretical studiers. Equitable wealth distribution was observed among VC participants in countries with better developed institutions, and in equitability was observed in countries with weak institutions.

8.4 Policy and industry practices contribution:

This study has also contributed to government and development partners' policy regarding entrepreneurial development, institutional reforms and building supplier production capabilities for productivity gains and competitiveness in the context of GVCs as follows:

- The finding of internality behavior demonstrates that entrepreneur's traits, characteristics and actions are basically behaviors that can be learnt, nurtured, and developed into a business culture, competencies and capabilities for enterprise growth, productivity and competitiveness. Therefore, policy program designs should focus on igniting these behaviors which are already embedded in the minds of the entrepreneurs, and then supporting the strengthening of such behavioral changes for entrepreneurs to effectively participate in GVCs in developing economies.
- The study also revealed that when the government exercises governance power by consensus with equitable representation of key value chain actors which creates a level-playing field that controls the value chain actors' behavior. This in turn fosters industry productivity gains and ultimately enhances competitiveness. This is a total departure from the GVC literature and practice which mainly characterizes chain governance power by the powerful lead firms, thus creating the observed situation of winners and losers in the GVC participants' competitiveness game.
- The findings of this study has demonstrated that sound institutional quality matters: According to the World Economic Forum's (WEF) Global Competitiveness Report (2010-2011) survey that covered 139 countries, the quality of their institutions were ranked (with low being desirable) as follows: Mauritius 43; South Africa 47; Malawi 52; Zambia 65; Swaziland 70; Tanzania 83, and Uganda 104 (WEF 2010). The latest 2014-2015 report that covered 144 countries revealed a similar trend: Mauritius 35; South Africa 36; Malawi 77; Zambia 52; Swaziland 61; Tanzania 93, and Uganda 115. Expectedly as the New Institutional Theory postulates; the countries that improved their institutions are the two leading in value chain actor's wealth distribution -

Mauritius and South Africa. Uganda's position declined in the latest ranking, implying a further decline in its institutional environment.

Therefore, from the institutional perspective findings of this study highlighted necessary reforms which were then adopted in the consultative meeting of 10th March 2016 chaired by the Hon. Minister of Trade, Industry & Cooperatives in the drafting of the National Sugar Bill 'Draft Uganda Sugar Bill 2016 (see Appendix 6). These issues have also been brought to the attention of Rt. Hon. Speaker of Parliament (see Appendix 7). Efforts have also been made in print media publications (see Appendix 8) to inform both the Public, Members of Parliament and especially the responsible Parliamentary Committee on Trade, Tourism & Industry as they debate the Draft Uganda Sugar Bill 2016 tabled before Parliament by Minister of Trade, Industry & Cooperatives on Thursday 19th, January 2017 (see Appendix 9). In brief, this study made key contributions so far agreed upon during the Ministerial consultative meeting of 10th March 2016 during the crafting of the Draft Uganda Sugar Bill 2016 in the following key areas:

- **Governance:** Equal representation of growers and millers fully agreed upon; members to be elected by respective associations instead of being hand-picked by the Minister fully agreed upon; and Chairperson to rotate between growers and millers for a term of office fully agreed upon.
- **Property rights ownership and 'ring' fencing policies:** No miller should obtain more than one license in a geographical region and fair competition should be taken into account during licensing and the approval of mill expansion programs.

- **Equitable value chain proceeds sharing:** The growers' share was increased from 35% to 50%, thus matching the general world standards in the sugar industry.

- Taxation regimes were identified by entrepreneurs as partly responsible for hindering business formalization. Government taxation policies should be designed and incentivized to attract sole-proprietorships to formalize their business operations so that the firms can graduate from informal to formal economy.

- Government policies should be designed to offer both technical and financial incentives for the development of other commodity sectors, so that the success story of Uganda's commercial forestry sector can be used for replication and scaling-up the development of other commodity sectors.

- Policy programs should be designed to support the development of production standards manuals, as they act as communication tools to primary producers to improve farm/firm productivity gains.
- Policy program interventions need to be designed in such as that knowledge and skills happens directly to the primary producers to strengthen their production capabilities for effective participation and upgrading in the GVCs in developing economies.
- Policy programs should be supported by the formation of robust primary growers associations and/or co-operatives that provides a platform for joint action to effectively participate in GVCs.
- Foreign Direct Investment (FDIs) policy programs should be designed to attract MNCs rather individual investor firms in Uganda. MNCs were found responsible to bring along best industry value chain practices that promote equitable revenue sharing

coupled with transfer of knowledge, skills and appropriate technology to local entrepreneurs as they are obliged to comply with international certification in their countries of operations in order for continued access to global markets. On the other hand, individual investor firms hardly subscribe to international certification programs and therefore were found to promote unproductive and/or predatory value chain practices.

- Dissemination of findings of this study attracted funding for Uganda Timber Growers Association (UTGA) from the World Wide Fund (WWF) for review of the existing legal framework and also to initiate consultations for establishment of an industry regulatory board for the forestry sector in Uganda.

8.5 Lessons for entrepreneurs and enterprises undertaking GVC participation

The overall arching question for this study is 'How do entrepreneur's behavioral practices determine competitive performance of agri-business enterprises undertaking GVC participation?'. The research question was developed to address the gap in the GVC literature that has identified actor's (entrepreneur's) behavior as an area of interest that possibly could explain why some countries are advancing in the global economy and while others are failing to do so despite. This study investigated behavioral practices grounded in the entrepreneurship behavioral approaches. Entrepreneurial behavioral approaches define an entrepreneur by what he does (practices that can be replicated) and not what he is (Gartner 1989). A practice that happens to be repetitive is said to have formed a pattern of behavior and it is these patterns of behavior that this study is interested in studying to inform entrepreneurs and enterprises considering undertaking meaningful GVC participation. The key lessons are elaborated below:

- Entrepreneurs should start businesses in which they are passionate. Passionate is an ingredient that helps an entrepreneur to steer the business to success and comply with the market demand quality requirements for effective GVC participation;

- An entrepreneur should understand the value chain structure and kind of major firms driving the value chain. Captive value chain structures driven by non-multinational corporations were possible should be avoided. On the other hand, captive value chains driven by Multi-national Corporation's offers better participation opportunities through a fairly equitable sharing of wealth created along the value chain. This was found to be so because MNCs are subjected to pressure groups from the global markets they operate in and also subscribe to international certification schemes that promote better business ethical behaviors in the marketplace;

- Entrepreneurs should consider undertaking GVC participation with supply contracts offering both market guarantee and indicative prices;

- Business formalization is important to enable the business to graduate from an informal to a formal economy with possibilities of accessing credit facilities from financial institutions. This strategy enables supplier firms to reduce high dependency on buyer firms with possibilities of increasing governance power in the value chain;

- Entrepreneurs should assess the quality of the business regulatory environment in determining the reward structure in the economy which in turn influences the allocation of entrepreneurial talent between productive investment activities such as innovation and

predatory investment activities such as rent-seeking behaviors that are detrimental for GVC participating firms in the upstream value chain;

- Entrepreneurs should consider participating in GVCs providing clearly documented standardized manuals, providing learning platforms that facilitates transfer of knowledge, skills and appropriate technology for building production capabilities and having in place a transparent grading per pricing system for VC participants;

- Entrepreneurs should consider strengthening collaborative horizontal VC relationships with a purpose of joint pooling of resources to pursue value addition investments in the lucrative forward linkages for effective GVC participation and market access.

8.6 Conclusion

This thesis is positioned from the beginning into the GVC discipline, with an assertion that; participation in global production networks and/or GVCs does not deliver the sustainable benefits as envisaged by crusaders of liberal reforms. This study affirms that, this failure can be attributed for the deregulation (disbandment) of organized cooperatives and marketing boards that underpinned producers bargaining positions and economic power in global markets. The proponents for liberalization especially in Uganda was based on a flawed argument that cooperatives and marketing boards were inefficient and therefore private sector (individuals) would perform better. This led to an emergence of an entrepreneurial class of market speculators and an expansion of a small number of buyers through direct forein investments exercising greater oligopoly power, while producers (growers) were more

fragmented, disfranchised and exposed to competition. This has been documented by this study as reflected in trend of unproductive and/or predatory entrepreneurial behaviors such as; low prices and margins for growers, cheating weighbridges/scales, lack of development of growers production capabilities, non-uniformity of grading systems and industry standards, growing inequality in value chain wealth distribution between growers and millers due to suppressed market bargaining power. This thesis contends that this drawback in market failure is a result of the inability by the proponents of the liberal reforms to recognize that free market policies deeply rooted in Adam Smith's book 'the wealth of nations', confer success based on sound quality institutions that control market behavior. This evidence is well articulated by De Soto 2000 in his book; 'the mystery of capital: why capitalism triumphs in the west and fails everywhere else'. Unfortunately, the findings of this study revealed that Uganda's institutions and the production capabilities of the private sector are generally weak. This weakness of institutions coupled with low private sector production capabilities, partly explains Uganda's failure to advance in the global economy despite undertaking GVC participation. Hence, this study would postulate that effective GVC participation for developing countries is through private sector (collectivism/producer organizations) and not through private sector (individualism) as envisaged by liberal reforms architects. This study finding was found to be in conformity with a major GVC study on capturing the gains by the GVC fraternity researchers (Goger, Hull, Barrientos, Gereffi, and Godfrey, 2014). Therefore, this study recommends intervention of development partners and governments in developing countries especially Uganda to offer both technical and financial support for building production capabilities, and the development of sound quality institutions for organized agri-business

enterprises structured in producers associations/cooperatives in order to undertake effective GVC participation.

8.7 Limitations of the research

This study applied theoretical sampling as opposed to statistical sampling. The purpose of this research was to contribute towards the emerging GVC theory and therefore, cases were selected because of their particular suitability for illuminating and extending relationships and logic among constructs. This implies that results of this study cannot be generalized for other agri-business value chain studies in Uganda.

The study investigated relationships between millers and growers participating in the agri-business value chains. This implies that relationships regarding distributors, whole-sellers, retailers, and consumers along the downward value chains and relationships involving input suppliers and contractors along the upstream value chains were not investigated.

8.8 Areas for further research

- This research was an explanatory case study in nature as it examined the data closely both at a surface and deep level in order to explain the phenomena in the data sets. The research adopted a comparative in-depth analysis of the same issues by examining them several times from different points of view. The issues were investigated by looking at entrepreneurial behavioral practices that influence competitive success or failure of enterprises participating in Uganda's agri-business value chains. Therefore a detailed study on cost production competitiveness along the value chains is an area of interest for further research.

- Entrepreneurial alertness failed to offer plausible explanations for distinguishing successful entrepreneurs and unsuccessful entrepreneurs in the context of Uganda with a high level of entrepreneurial talent. Therefore, more research is necessary to investigate entrepreneurial alertness in environments with high levels of entrepreneurship talent.

- The findings revealed a discrepancy in value chain practices. In particular companies ran by South Africans and Europeans demonstrated better value chain practices than those ran by Asians and Chinese. This finding suggests further research on influence of culture on business ethics and value chain practices.

- Application of case study approach to other agri-business value chains in Uganda would be an area of interest for future research, in order to draw parallels and contradictions.

- Application of empirical data in hypothesis testing of the relationships between constructs would be an area of interest to strengthen construct reliability and external validity of results for generalizations of results.

- This study was conducted in Uganda considered as a low developing economy. Application of case study approach to investigate the behavior of agri- business value chains in other developing and emerging economies would be appropriate.

- The results of this study are a reflection of protectionism policies practiced in some regions of Uganda's sugarcane industry. A study of regions in Uganda that have a fair concentration of sugar mills would be appropriate to assess the behavior of the value chains.

- Multi-national corporations were found to practice better value chain practices including equitable sharing of revenue between growers and millers in the industry and were also subscribers to international certification schemes. Therefore, a detailed comparative study to investigate value chain practices and equitable sharing of revenue between corporations subscribing to international certifications and corporations non-subscribing to international certifications is necessary to guide countries in attracting foreign investments.

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Appendix 1: Research Instrument survey primary producers sugarcane

Graduate School of Business – University of Cape Town (PhD Survey)

QUESTIONNAIRE ID: …….. Primary Producers/Commercial Farmers
CLASSIFICATION:……

The purpose of this study is to undertake a value chain analysis for commercial entrepreneurs/ enterprises involved in the commercial sugar and/or forestry industry.
The questionnaire will take approx. 45 min - 1 hr.
Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.
The researcher also did a pilot study of the South African sugar and forestry value chains; the data will be used to inform this study, and the lessons drawn will be disseminated, to the interested participants.

Should you have any questions regarding the research please feel free to contact the researcher (0712 534 781, e-mail:mmugabira@gmail.com).

Kindly endorse your signature consenting to fill the research questionnaire: .....

Name of firm: ……..
Contact person: ……. Position: ……
Zone: ……..Village……
Sub-county: ……District……
Enterprise: *Sugarcane Production/Growing*
Tel:.....E-mail: .....
Address: ……
Level of education: ……..
Gender: Male……Female…….

1. Ownership

1.1 what is the form of ownership of your firm? Tick ( ) as appropriate.

( ) Sole proprietorship/ unregistered
(…) Partnership
(…) Corporate Limited, number of shareholders……, country of origin….
(…) Joint Venture; if JV elaborate on partners % share of ownership and country of origin

1.2 when was your firm established?.....

1.3 form of business land ownership (fill whichever is applicable)

(a) (……..) acreage of government (public) leased land

(b) (……..) acreage of private owned land

(c) (……..) acreage private leased and/or hired land

1.4 state your average production capacity and revenue generated in last three years

(a) (……..) annual tones

(b) (……..) hectares farmed

(c) (…….) revenue generated (optional)

A. **Value Chain Competitiveness**

On a scale of 1-5, rank the importance by *ticking* of the following key success factors for your business competitiveness and/or survival:

Key Success Factors	**1 Not important**	**2 Less important**	**3 Fairly important**	**4 Quite important**	**5 Very important**
Personal involvement in the business					
Being passionate and/ or interested in the business					
Reliable quality (high cane sugar content)					
Reliable quantity (high tonnages per hectare)					
Access to technical knowledge (extension advisory services)					
Timely application of best agronomical practices					
Reliable and/or guaranteed market price					
Quality seed cane with long inter-nodes and high moisture content (to enhance weight)					
Reliable cash flow in the business					
Good will for the business with local community					
Prompt payment of workers					

Millers' Expectations (goals) from the farmer	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
Miller prefers farmers to grow seed cane with high sugar content but giving less weight					
Miller expects farmers to have passion and/ or interest in the cane business					
Miller expects farmers to produce good quality (high cane sugar content)					
Miller expects farmers to achieve high yields/tonnages per hectare (quantity)					

Farmers to follow miller's directives (e.g. directives on agronomical practices, quality, quantity, etc.) without questioning						
Miller expects farmers to undertake timely application of best agronomical practices						
Miller delivers seed cane in time for planting						
Miller pressures farmers to accept price reduction on cane						
Miller expects personal involvement of a farmer in the business						

B. **Appropriation and Distribution of Gains**

On a scale of 1-5, rank your perceptions by *ticking* with regards to appropriation and distribution of gains among VC participants

	Factors	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
B.1	**Factor inputs**					
	Farm labour wages take greatest share of my income/revenue					
	Cost of inputs for sugar cane production take greatest share of my income/revenue					
	Cost of land purchase/ hire takes greatest share of my income/revenue					
B.2	**Locational dimensions**					
	There is equitable (fair) sharing of revenue between miller & farmers					
	Price for cane is agreed upon in advance by both miller and farmers through negotiations					
	Factors (continued from previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	The government takes the 'lions' share of the sugar market price through taxation					
	Middlemen use more information that they have about market conditions to get better deals from farmers when buying sugar plantations					
	The price formula benefits the miller more than farmers					
B.3	**Value addition and revenue**					

	The miller's processing plant machinery is efficient					
	Farmers benefit from the by-products (bagasse, molasses, mud-fertilizer, etc)					

C. **Incentives and Regulatory Investment Regime**

On a scale of 1-5, rank by *ticking* the relevance of the following factors in motivating your business start-up and/or expansion in the sugar industry.

	Factors	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
C.1	**Incentives from Development Partners/ Government in form of:**					
	Access to production cost share grants and/or inputs from donors attracted me to start/ grow my business					
	Access to government land issued through permits attracted me to invest in the cane business					
	Access to training/ know how supported by donors enabled me start my business					
	Access to market with help of donors assisted me to start my business					
C.2	**Comparative advantages of the geographical area:**	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	Existence of a growing farmers cane production cluster attracted me to invest in the cane business					
	Factor production endowment (e.g, favorable climate, rainfall, soils and temperatures) attracted me to invest in cane business					
	Free flow of market information based on 'hearsay' that there are high returns (money) lured me to invest in the cane business					
	Guaranteed market by presence of a major miller attracted me to invest in					

	the cane business					
	Availability of and access to affordable private land attracted me to invest in cane business					
	Improved infrastructure especially roads attracted me to invest in cane business					
	Access to loan facility provided by miller attracted me to invest in cane business					
C.3	**Planned growth potential in the next three years:**					
	I am planning to increase production capacity in land area (no. of hectares)					
	I am planning to increase productivity per hectare (tonnages)					
	Planning to purchase new machinery (eg. tractors, transport trucks)					
	I am planning to undertake sugar cane study tour abroad using own financial support for personal exposure					
	Formalize my business by registering it as a company *(if not yet registered)*					
	Factors (continued from previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	I am planning to establish a fully and/or mini-processing plant for sugar cane value addition (eg. Jaggery mill)					
	I am planning to initiate the process of mentoring family members to manage the business for generational continuity					
	I am planning to invite the public to buy shares in the business					
	Request miller to provide financial support for farmers sugar cane study tour abroad for exposure					
	I am planning to gradually move to self-reliance by reducing on loans					

	advanced by miller					
	I planned the investment in the sugar business as my future retirement package					
C.4	**Regulatory Regime (entry barriers and/or open entry):**					
	Policy of high taxes on sugar imports to protect local sugar industry is good for my cane business					
	Sugar policy requiring one miller per 25 kilometer radius is restrictive & denies farmers fair market competition					
	Policy that guarantees security of land ownership is an incentive for investments in long-term projects					
	A Sugar Board need to be established to regulate & set standards for the sugar industry players					
	Access to loan facility *(without collateral)* promotes a culture of dependency syndrome among farmers *"i.e., most farmers expect all work activities to be done by miller"*					

D. **Compliance with Standards for Market Access**

On a scale of 1-5, rank your perceptions by *ticking* regarding clarity on the terms and conditions embedded in the Cane Production Contract (CPC)

The CPC clearly specifies:	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
The agronomical practices to be done by the farmer					
The minimum acceptable tonnages per hectare					
The grading system of cane delivered and pricing according to grade					
The price formula is clear and easily understandable					
The traceability system (labeling of farmers cane delivered to miller) is in place					
The timing and scheduling of operations are properly specified					

The penalties for cane below standards are in place						
Penalties for post-harvest losses in fields and haulage (transport) are specified for contractors						

E. 1: **Collaboration for Diffusion of Production Capabilities**

Vertical Linkages - (Suppliers/Farmers & Miller)

On a scale of 1-5, identify and rank by *ticking* the kind of support and business relationships between your sugar cane business and the miller

	Factors	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
E1.1	**Specific investment incentives (identify support received and rate its importance to your performance):**					
	Miller's credit / loans for land development and inputs are important for my business' performance					
	Collaboration with miller has improved my price negotiation powers					
	Collaboration with miller has improved my planning & management skills for cane business					
	Collaboration with miller has enabled me to adopt best agronomical practices					
	Collaboration with miller has enabled me acquire knowledge in harvesting, packaging & transporting sugar cane to the factory					
	Factors (Continued from the previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
E1.2	**Coordination costs (rate the effect of these transactional costs on performance of your business):**					
	There is less cost or time spent on seeking information on best agronomical practices by farmers from the miller					
	There is less cost or time spent on getting payment from the miller for cane supplied					
	Miller provides farmers with a list of certified suppliers of inputs such as chemicals for weed control					
E1.3	**Quality of relationship (rate your perceptions**					

	attached to the quality of your relations):					
	Relationship between farmer and miller is mutually beneficial					
	The weigh bridge is a transparent system					

E. 2: Collaboration for Diffusion of Production Capabilities

Horizontal Linkages – (Producers 2 Producers or Associations or Development Partners)

On a scale of 1-5, identify and rate by *ticking* the kind of support and business relationships between yourself (farmer) and either fellow farmers, or umbrella association of farmers, or development partner

	Support and Business Relationships	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
E2.1	**Specific investment incentives (identify support received and rate its relevance to your business performance):**					
	We undertake credits and/or loaning of inputs among fellow farmers to facilitate the sugar cane business					
	Participation in this famers cluster has improved my production planning skills and managing of operations for the sugar business					
	Support and Business Relationships (Continued from the previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	Participation in this farmers cluster has improved my adoption of best agronomical practices					
	We share production machinery (eg. Tractors) among farmers for purposes of reducing the cost of cane production					
	Participation in this farmers cluster enabled me to gain knowledge on how to determine the value of the sugar cane plantation for better negotiations with intermediary buyers					
E2.2	**Coordination costs (rate the effect of these transactional costs on performance of your business):**					
	There is less cost or time spent on searching and/or screening credible fellow farmers to associate with					
	There is less cost or time spent on getting information related to credible suppliers of chemicals from fellow					

	farmers					
	There is less cost or time spent on recovery of loans/cash advances and/ or inputs among fellow farmers					
E2.3	**Quality of relationship (rate your perceptions attached to the quality of your relations)**					
	Relations among farmers are mutually beneficial					
	Trust/goodwill relations exist among the farmers					
E2.4	**Significance for source of technical & financial support**					
	I have received significant support from Fellow producers/ individual farmers for my cane growing business					
	I have received significant support from the Umbrella Association (s) e.g. KSGA, MSGA for my cane growing business					
	I have received significant support from the Development Partner (s) or Government (e.g. NAADS, PSFU) for my cane growing business					

Please any questions, comments, or observations indicate below:

……

……

Thank you

Appendix 2 Research instrument primary producers interview (first round)

QUESTIONNAIRE ID: …….. Primary Producers/Commercial Farmers

The purpose of this study is to undertake a value chain analysis for commercial entrepreneurs/ enterprises involved in the commercial sugar and/or forestry industry. The questionnaire will take approx. 3 hrs.

Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.

Should you have any questions regarding the research please feel free to contact the researcher (0712 534 781, e-mail:mmugabira@yahoo.com).

Kindly endorse your signature consenting to be interviewed: ……

Name of firm: ……..

Contact person: ……. Position: ……

Zone: ……..Village……..

Sub-county: …….District……

Enterprise: *Sugarcane Growing/ Forestry*

Tel:.....E-mail: .....

Address: ……

Level of education: ……..

Gender: Male……Female…….

2. Ownership

2.1 What is the form of ownership of your firm? Tick ( ) as appropriate.

( ) Sole proprietorship/ unregistered

(…) Partnership

(…) Corporate Limited, number of shareholders……, country of origin….

(…) Joint Venture; if JV elaborate on partners % share of ownership and country of origin

2.2 When was your firm established? .....

2.3 state your average production capacity in last three years

( ) annual tones/volume

( ) hectares farmed

( ) revenue generated

A. Value Chain Competitiveness

What are the key success factors that you consider for your business competitiveness and/or survival?

B. Appropriation and Distribution of Gains

1. What are your perceptions with regards to appropriation of income among participants within your firm?
2. What are your perceptions with regards to who determines the distribution of gains along the value chain among VC participants?
3. Can you elaborate further why you view things the way you do?

C. Business Growth & Investment Incentive Regime

1. Why did you choose this form of business other than others?
2. Which plans do you have for your business growth in the next three years? i.e, expansion in hectares, purchase of machinery, purchase of transporting trucks, establishment of mini-processing plant for value addition etc.
3. Which incentives and/or factors do you think can explain your business start-up and/or expansion in this cluster?

4. Have you received any incentives from development partners and/or government? Mention source and kind of support so far received?

D. Compliance with Standards for Market Access

1. Do buyer/miller (s) avail you standards that you must meet in order to become their supplier.
2. If so how are they specified?
3. Is price agreed upon in advance?
4. Do you have a grading system commensurate with price premiums? *Probe if payment is based on quality or volume delivered……*
5. Do buyers reject some of your commodities?
6. If so, approximately which percentage has been rejected per ton/ or per bag of 100 kg?
7. What reasons do they provide for rejecting your commodities?
8. Which reasons seem to be the common one?
9. What have you done to address the reasons given by the buyers?
10. Have you ever been excluded from future business by buyer(s) due to poor quality?

E. Collaboration for Diffusion of Production Capabilities (Vertical Linkages)

1. What kind of support do you receive from buyer/miller (s)?
2. How has that support enabled you to improve capacity in:

(a) Production planning to meet buyers' demands;

(b) Production methods for better yields;

(c) Price negotiations;

(d) Packaging and transporting logistics to markets?

3. Do you experience post-harvest losses at the farm fields? If so approx. what percentage per ton?
4. Do you incur losses as a result of transporting your commodities to the market? If so approx. what percentage per ton?
5. In your view is the support (credit, inputs) received from buyer/miller(s) appropriately used for the intended purpose?
6. Do you sign a formal contract with buyer (s)?
7. If so, how are contracts enforced by either party in case of breach of contract?
8. What is the quality of relationship and/or trust between you and the buyer (s)?

F. Collaboration for Diffusion of Production Capabilities (Horizontal Linkages)

1. What kind of support do you receive from your competitors (i.e., farmers) in this cluster?
2. Do you have any formal association and if so what role does it play for businesses operating in this cluster?
3. How has your participation in this cluster/association enabled you to gain knowledge in:

(a) Production planning to meet buyer's demands;

(b) Optimization of production equipments through sharing;

(c) Perfection of production methods for better yields,

(d) Price negotiations?

4. What is the quality of relationship and/or trust among you (in association, competitors)
5. What lessons have you gained by participating in this business cluster?
6. Do you think lessons from this business cluster can be replicated and scaled up in other sectors and/or areas of the country?

Kindly do you have any question, comment or observation to make? (Option)

Thank you

Appendix 3: Research instrument interview for policy (first round)

QUESTIONNAIRE ID:……..Policy/Associations

The purpose of this study is to undertake a value chain analysis for commercial entrepreneurs/ enterprises involved in the commercial sugar and/or forestry industry.

The questionnaire will take approx. 3 hrs.

Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.

Should you have any questions regarding the research please feel free to contact the researcher (0712 534 781, e-mail:mmugabira@yahoo.com).

Kindly endorse your signature consenting to be interviewed: ……

Name of firm: ……..

Contact person: ……Position: ……

Zone: ……..Village……..

Sub-county: ……District……

Tel:.....E-mail: .....

Address: ……

Level of education: …….

Gender: Male…….Female…….

Enterprise: *Sugarcane / Forestry*

3. Ownership

3.1 What is the form of ownership of this body? Tick ( ) as appropriate.

( ) Co-operative

(…) Partnership

(…) Corporate Limited, number of shareholders……, country of origin….

(…) Joint Venture; if JV elaborate on partners % share of ownership and country of origin

3.2 When was the association established? .....

3.3 Do you purchase raw materials, if so state your average capacity in last three years

( ) annual tones/ volume

(…) hectares harvested

(…) revenue generated

3.4 Do you engage in primary production/farming as an association, if so state your average production capacity in last three years

( ) annual tones/volume

( ) hectares farmed

( ) revenue generated

G. Value Chain Competitiveness

What do you think are the key success factors considered by commercial farmers for their business competitiveness and/or survival?

H. Appropriation and Distribution of Gains

4. What are your perceptions with regards to appropriation of income among participants within the farmer's enterprises/farms?

5. What are your perceptions with regards to who determines the distribution of gains along the value chain among VC participants?

6. Can you elaborate further why you view things the way you do?

I. Business Growth & Investment Incentive Regime

5. Why do farmers choose this form of business other than others?

6. Which plans do commercial farmers generally have for their business growth in the next three years? i.e, expansion in hectares, purchase of machinery, purchase of transporting trucks, expansion of processing plant for value addition etc.

7. Which incentives and/or factors do you think can explain business start-ups and/or expansion in this cluster?

8. Have commercial farmers received any incentives from development partners and/or government? Mention source and kind of support so far received?

J. Compliance with Standards for Market Access

11. Are farmers availed with standards that they must meet in order to supply the miller (s)?

12. If so how are they specified?

13. Is price agreed upon in advance?

14. Do you have a grading system commensurate with price premiums? *Probe if payment is based on quality or volume delivered…….*
15. Do millers reject some of the suppliers' commodities?
16. If so, approximately which percentage has been rejected per ton?
17. What reasons do millers provide to the suppliers/farmers for rejecting their commodities?
18. Which reasons seem to be the common one?
19. What has the miller (s) done to address the reasons for rejecting suppliers/farmers commodities?

20. Have the miller (s) ever excluded suppliers/farmers from future business due to poor quality?

K. Collaboration for Diffusion of Production Capabilities (Vertical Linkages)

9. What kind of support do miller (s) avail their supplier/farmer (s)?
10. How has that support enabled farmers/suppliers to improve capacity in:

(a) Production planning to meet miller (s) demands,

(b) Production methods for better yields,

(c) Price negotiations,

(d) Packaging and transporting logistics to the miller (s)?

11. Do farmers experience post-harvest losses at the farm fields? If so approx. what percentage per ton? I.e. association fields…….; farmer fields ……
12. Do farmers incur losses as a result of transporting raw materials to the miller (s)? If so approx. what percentage per ton?
13. In your view is the support (credit, inputs) received by commercial supplier/farmer(s) appropriately used for the intended purpose?
14. Do farmers sign a formal contract with the miller (s)?
15. If so, how are contracts enforced by either party in case of breach of contract?
16. What is the quality of relationship and/or trust between farmers and the miller (s)?

L. Collaboration for Diffusion of Production Capabilities among suppliers (Horizontal Linkages)

7. What kind of support do suppliers receive from fellow competitors (i.e., farmers) in this cluster?
8. Do suppliers have any formal association and if so what role does it play for businesses operating in this cluster?
9. How has suppliers/farmers association in this cluster enabled them to gain knowledge in:

(a) Production planning to meet buyer's demands,

(b) Optimization of production equipments through sharing,

(c) Perfection of production methods for better yields,

(c) Price negotiations?

10. What is the quality of relationship and/or trust among suppliers/farmers (in association, competitors)?
11. What lessons have suppliers/farmers gained by associating in this business cluster?
12. Do you think lessons from this business cluster can be replicated and scaled up in other sectors and/or areas of the country?

Kindly do you have any question, comment or observation you would like to make.

Thank you

Appendix 4: Research instrument interview millers (first round)

QUESTIONNAIRE ID:……..Processors/Buyers (miller employees)

The purpose of this study is to undertake a value chain analysis for commercial entrepreneurs/ enterprises involved in the commercial sugar and/or forestry industry.

The questionnaire will take approx. 3 hrs.

Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.

Should you have any questions regarding the research please feel free to contact the researcher (0712 534 781, e-mail:mmugabira@yahoo.com).

Kindly endorse your signature consenting to be interviewed: ……

Name of firm: ……..

Contact person: …….Position: ……

Zone: ……..Village……..

Sub-county: …….District……

Tel:.....E-mail: .....

Address: ……

Level of education: …….

Gender: Male…….Female…….

Enterprise: *Sugarcane / Forestry*

4. Ownership

4.1 What is the form of ownership of your firm? Tick ( ) as appropriate.

( ) Sole proprietorship/ unregistered

(…) Partnership

(…) Corporate Limited, number of shareholders……, country of origin….

(…) Joint Venture; if JV elaborate on partners % share of ownership and country of origin

4.2 When was your firm established? .....

4.3 Do you purchase raw materials, if so state your average capacity in last three years

( ) annual tones/ volume
(…) hectares harvested
(…) revenue generated

4.4 Do you engage in primary production/farming, if so state your average production capacity in last three years

( ) annual tones/volume
( ) hectares farmed
( ) revenue generated

M. Value Chain Competitiveness

What are the key success factors that you consider for your business competitiveness and/or survival?

N. Appropriation and Distribution of Gains

7. What are your perceptions with regards to appropriation of income among participants within your firm?

8. What are your perceptions with regards to who determines the distribution of gains along the value chain among VC participants?

9. Can you elaborate further why you view things the way you do?

O. Business Growth & Investment Incentive Regime

9. Why did you choose this form of business other than others?

10. Which plans do you have for your business growth in the next five years? i.e, expansion in hectares, purchase of machinery, purchase of transporting trucks, expansion of processing plant for value addition etc.

11. Which incentives and/or factors do you think can explain your business start-up and/or expansion in this cluster?

12. Have you received any incentives from development partners and/or government? Mention source and kind of support so far received?

P. Compliance with Standards for Market Access

21. Do you avail standards that suppliers/farmers must meet in order to become your supplier?

22. If so how are they specified?

23. Is price agreed upon in advance?

24. Do you have a grading system commensurate with price premiums? *Probe if payment is based on quality or volume delivered…….*

25. Do you reject some of your suppliers/farmers' commodities?

26. If so, approximately which percentage has been rejected per ton?

27. What reasons do you provide to your suppliers/farmers for rejecting their commodities?

28. Which reasons seem to be the common one?

29. What have you done to address the reasons for rejecting suppliers/farmers commodities?

30. Have you ever excluded suppliers/farmers from future business due to poor quality?

Q. Collaboration for Diffusion of Production Capabilities (Vertical Linkages)

17. What kind of support do you avail your supplier/farmer (s)?

18. How has that support enabled you to improve capacity in:
(a) Production planning to meet your demands,

(b) Production methods for better yields,

(c) Price negotiations,

(d) Packaging and transporting logistics to your firm?

19. Do you experience post-harvest losses at the farm fields? If so approx. what percentage per ton? I.e. own fields…….; supplier fields ……

20. Do you incur losses as a result of transporting raw materials to your firm? If so approx. what percentage per ton?

21. In your view is the support (credit, inputs) received by supplier/farmers (s) appropriately used for the intended purpose?

22. Do you sign a formal contract with supplier/farmer (s)?

23. If so, how are contracts enforced by either party in case of breach of contract?

24. What is the quality of relationship and/or trust between you and the supplier/farmer(s)?

R. Collaboration for Diffusion of Production Capabilities among suppliers (Horizontal Linkages)

17. What kind of support do suppliers receive from fellow competitors (i.e., farmers) in this cluster?

18. Do suppliers have any formal association and if so what role does it play for businesses operating in this cluster?

19. How has suppliers/farmers association in this cluster enabled them to gain knowledge in (a) Production planning to meet buyer's demands,

    (b) Optimization of production equipments through sharing,

    (c) Perfection of production methods for better yields,

    (c) Price negotiations?

20. What is the quality of relationship and/or trust among suppliers/farmers (in association, competitors)?

21. What lessons have suppliers/farmers gained by associating in this business cluster?

22. Do you think lessons from this business cluster can be replicated and scaled up in other sectors and/or areas of the country?

Kindly do you have any question, comment or observation you would like to make.

Thank you

Appendix 5: Research Instrument survey primary producer forestry

Graduate School of Business – University of Cape Town (PhD Survey)
QUESTIONNAIRE ID: …….. Primary Producers/Commercial Farmers
CLASSIFICATION:……

The purpose of this study is to undertake a value chain analysis for commercial entrepreneurs/ enterprises involved in the commercial sugar and/or forestry industry.

The questionnaire will take approx. 45 min - 1 hr.

Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.

The researcher also did a pilot study of the South African sugar and forestry value chains; the data will be used to inform this study, and the lessons drawn will be disseminated, to the interested participants.

Should you have any questions regarding the research please feel free to contact the researcher (0712 534 781, e-mail:mmugabira@gmail.com).

Kindly endorse your signature consenting to fill the research questionnaire: .....

Name of firm: ……..
Contact person: ……. Position: ……
Zone: ……..Village……
Sub-county: ……District……
Enterprise: *Forestry Production/Growing*
Tel:.....E-mail: .....
Address: ……
Level of education: ……..
Gender: Male……Female…….

5. Ownership

5.1 what is the form of ownership of your firm? Tick ( ) as appropriate.

( ) Sole proprietorship/ unregistered
(…) Partnership
(…) Corporate Limited, number of shareholders……, country of origin….

(…) Joint Venture; if JV elaborate on partners % share of ownership and country of origin

5.2 when was your firm established?.....

5.3 form of business land ownership (fill whichever is applicable)

(d) (……..) acreage of government (public) leased land

(e) (……..) acreage of private owned land

(f) (……..) acreage private leased and/or hired land

5.4 state your average production capacity and revenue generated in last three years

(c) (……..) annual tones

(d) (……..) hectares farmed

(c) (……..) revenue generated (optional)

S. Value Chain Competitiveness

On a scale of 1-5, rank the importance by *ticking* of the following key success factors for your business competitiveness and/or survival:

Key Success Factors	**1 Not important**	**2 Less important**	**3 Fairly important**	**4 Quite important**	**5 Very important**
Personal involvement in the business					
Being passionate and/ or interested in the business					
Reliability in quality (properly pruned logs)					
Reliability in quantity (high yields/tonnages per hectare by proper thinning)					
Access to technical knowledge (extension advisory services)					
Timely application of best silvi-culture practices					
Reliable and/or guaranteed market price					
Availability of quality seed and/or seedlings					
Reliability of cash flow in the business					
Good will of the business with local community					
Prompt payment of workers					

Millers' Expectations (goals) from the farmer	**1 Not Agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
Miller expects farmers to have passion and/ or interest in the forestry business					

Miller expects reliable quality logs (properly pruned, straight logs & suitable fiber strength)					
Miller expects reliable supply quantities (high volume/tonnages)					
Farmers to follow miller's directives (e.g. directives on quality, quantity, suitable sizes of logs/poles etc.) without questioning					
Miller expects a well maintained forest plantation (based on timely application of silvi-culture practices)					
Miller expects timely delivery of logs					
Miller pressures farmers to accept price reduction on logs or forestry plantation					
Miller expects personal involvement of a farmer in the forestry business					

T. Appropriation and Distribution of Gains

On a scale of 1-5, rank your perceptions by *ticking* with regards to appropriation and distribution of gains among VC participants

	Factors	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
B.1	**Factor inputs**					
	Farm labour wages take greatest share of my income/revenue					
	Cost of inputs for forestry establishment take greatest share of my income/revenue					
	Cost of land purchase/ hire takes greatest share of my income/revenue					
B.2	**Locational dimensions**					
	There is equitable (fair) sharing of revenue between miller & farmers					
	Price for logs is agreed upon in advance by both miller and farmers through negotiations					
	Factors (Continued from previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	The government takes the 'lions' share of the timber/pole market price through taxation					
	Middlemen use more information that they have					

	about market conditions to get better deals from farmers when buying forestry plantations					
	The price formula benefits the miller more than farmers (*if applicable*)					
B.3	**Value addition and revenue**					
	The miller's processing plant machinery is efficient					
	Farmers benefit from the log by-products (shavings, tree barks used for composite fire, etc)					

U. Incentives and Regulatory Investment Regime

On a scale of 1-5, rank by *ticking* the importance of the following factors in motivating your business start-up and/or expansion in the forestry industry.

	Factors	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
C.1	**Incentives from Development Partners/ Government in form of:**					
	Access to production cost share grants *(i.e by SPGS)* and/or inputs attracted me to start/grow my business					
	Access to government land issued through permits attracted me to invest in the forestry business					
	Access to training/ know how supported by donors enabled me to invest in the forestry business					
	Access to market supported by donors enabled me to invest in the forestry business					
C.2	**Comparative advantages of the geographical area:**	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	Existence of a growing farmers forestry production cluster attracted me to invest in the forestry business					
	Factor production endowment (e.g, favorable climate, rainfall, soils and					

	temperatures) attracted me to invest in the forestry business					
	Free flow of market information based on 'hearsay' that there are a lot of returns (money) lured me to invest in the forestry business					
	Guaranteed market by presence of a major miller(s) attracted me to invest in the forestry business					
	Availability of and access to affordable private land attracted me to invest in the forestry business					
	Improved infrastructure especially roads attracted me to invest in the forestry business					
	Access to loan facility provided by miller attracted me to invest in the forestry business					
C.3	**Planned growth potential in the next three years:**					
	I am planning to increase production capacity in land area (no. of hectares)					
	I am planning to increase productivity per hectare (tonnages)					
	Planning to purchase new machinery (eg. tractors, transport trucks)					
	I am planning to undertake forestry study tour abroad using own financial support for personal exposure					
	Formalize business by registering it as a company (*if not yet registered*)					
	Factors (Continued from the previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	I am planning to establish a fully and/or mini-processing plant (eg. Saw mill) for timber value addition					
	I am planning to initiate the process of mentoring family members to manage the					

	business for generational continuity					
	I am planning to invite the public to buy shares in the business					
	Request miller or donor to provide financial support for farmers forestry study tour abroad for exposure					
	I am planning to gradually move to self-reliance by reducing on loans					
	I planned the investment in the forestry business as my future retirement package					
C.4	**Regulatory Regime (entry barriers and/ or open entry):**					
	High taxes on timber imports to protect local forestry industry would be good					
	Forestry policy allowing many millers to operate in farmers clusters promotes fair market competition					
	Policy mandating local cluster farmers to access carbon trading will promote forestry business & clean environment					
	Policy that guarantees security of land ownership is an incentive for investments in long-term projects					
	A Forestry Board need to be established to regulate & set standards for the forestry industry players					
	Access to financial assistance through phased reimbursement of costs (*eg. SPGS pay system*) deters fraudulent behavior of entrepreneurs					

V. Compliance with Standards for Market Access

On a scale of 1-5, rank your perceptions by *ticking* regarding clarity on the terms and conditions embedded in the Industry Forestry Production Contract (IFPC) and the associated forestry establishment manual and other relevant guiding documents

The documents clearly specifies:	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
The silvi-culture practices to be done by the farmer					

The minimum acceptable survival rate per hectare					
The grading system of logs delivered and pricing according to grade					
Bench marks for price determination are clear and easily understandable to guide price negotiations					
The timing and scheduling of operations					
The traceability (labeling of farmers logs) is in place					
The penalties for forestry being below standards					
Penalties for post-harvest losses in fields and haulage (transport) are specified for contractors					

W. 1: **Collaboration for Diffusion of Production Capabilities Vertical Linkages - (Suppliers/Farmers & Miller)**

On a scale of 1-5, identify and rank by *ticking* the kind of support and business relationships between your forestry business and miller

	Factors	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
E1.1	**Specific investment incentives (identify support received and rate its importance to your performance):**					
	Miller's credit / loans for land development and inputs are important for my business' performance					
	Collaboration with miller has improved my price negotiation powers					
	Collaboration with miller has improved my planning & management skills for forestry business					
	Collaboration with miller has enabled me to adopt best silvi-culture practices					
	Collaboration with miller has enabled me acquire knowledge in harvesting, packaging & transporting of logs or transmission poles to the factory					
	Factors (Continued from the previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
E1.2	**Coordination costs (rate the effect of these transactional costs on performance of your business):**					
	There is less cost or time spent on seeking information on best silvi-culture practices by farmers from the miller					

	There is less cost or time spent on getting payment from the miller for logs or poles supplied					
	Miller provides farmers with a list of certified suppliers of inputs such as chemicals for weed control and seedlings					
E1.3	**Quality of relationship (rate your perceptions attached to the quality of your relations):**					
	Relationship between farmer and miller is mutually beneficial					
	The weigh bridge is a transparent system					

F. 2: Collaboration for Diffusion of Production Capabilities

Horizontal Linkages – (Producers 2 Producers or Associations or Development Partners)

On a scale of 1-5, identify and rate by *ticking* the kind of support and business relationships between yourself (farmer) and either fellow farmers, or umbrella association of farmers, or development partner agencies

	Support and Business Relationships	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
E2.1	**Specific investment incentives (identify support received and rate its importance to your performance):**					
	We undertake credits and/or loaning of inputs among fellow farmers to facilitate the forestry business					
	Participation in this farmers cluster has improved my production planning skills and managing of operations for the forestry business					
	Support and Business Relationships (Continued from the previous page)	**1 Not agree**	**2 Slightly agree**	**3 Fairly agree**	**4 Quite agree**	**5 Highly agree**
	Participation in this farmers cluster enhanced my adoption of best silvi-culture practices					
	We share production machinery (eg. Tractors, pruning saws) among farmers for purposes of reducing the cost of forestry production or growing					
	Participation in this farmers cluster enabled me to gain knowledge on how to determine the value of the forestry plantation for better negotiations with intermediary buyers of forestry plantations					
E2.2	**Coordination costs (rate the effect of these**					

	transactional costs on performance of your business):					
	There is less cost or time spent on searching and/or screening credible fellow farmers to associate with					
	There is less cost or time spent on getting information related to credible suppliers of chemicals from fellow farmers					
	There is less cost or time spent on recovery of loans/cash advances and/or inputs among fellow farmers					
E2.3	**Quality of relationship (rate your perceptions attached to the quality of your relations)**					
	Relations among the farmers are mutually beneficial					
	Trust/goodwill relations exist among the farmers					
E2.4	**Significance for source of technical & financial support**					
	I have received significant support from Fellow producers/ individual farmers for my forestry business					
	I have received significant support from the Umbrella Association (s) e.g. UTGA, UTGA–SACCO for my forestry business					
	I have received significant support from the Development Partner (s) or Government e.g. SPGS for my forestry business					

Please any questions, comments, or observations indicate below:

……

……..

Thank you

Appendix 6: Key policy lessons to the crafting of the draft Uganda Sugar bill 2016

UGANDA OUT-GROWER ASSOCIATIONS PRESENTATION & SUBMISSION TO THE PARLIAMENTARY COMMITTEE ON TRADE, TOURISM & INDUSTRY AND MEMBERS OF PARLIAMENT (LOBBY GROUP) FOR GUIDING DELIBERATIONS ON FLOOR OF PARLIAMENT - REPUBLIC OF UGANDA

THREE KEY POLICY AREAS THAT REQUIRE ATTENTION FOR UGANDA'S SUGAR INDUSTRY COMPETITIVENESS:

- Governance: A Balanced Power Sharing Regulatory Board 'Uganda Sugar Board"
- Property Rights Ownership: Dismantling the Ring Fencing Policy 'i.e., specifies One Mill per 25 kilometre radius'.
- Equitable Sharing of Revenue among Value Chain producers: Revised Cane Payment System

Summary Tabulation Regional Policy Lessons for Draft Uganda Sugar Bill 2016

POLICY ISSUE: Governance- A Balanced Power Sharing Regulatory Board		
Country	**Legal Instrument**	**Board Composition**
South Africa	Sugar Act 1978 & Sugar Industry Agreement 2000	South African Sugar Association (SASA) is the main Regulatory Body; SASA is composed of two major bodies, namely South African Cane Growers Association (SACGA) & South African Sugar Millers Association (SASMA); Both SACGA & SASMA are equal partners by electing 11 members to SASA Council; Chairmanship & Vice rotates every 2 years.
Tanzania	Sugar Industry Act 2001	Tanzania Sugar Board is the regulatory agency; Chairman appointed by the President as advised by the Minister; 1 Consumer representative; 2 members from Millers Association; 2 members from Growers Association; 1 member representing Government from Ministry of Agriculture; 1 member from amongst persons who in the opinion of the Minister possesses the knowledge and experience beneficial to the sugar industry.
Kenya	Sugar Act 2001,	Kenya Sugar Board is the regulatory agency;

	amended bill 2011	Non-executive Chairman elected by the board from among growers representatives on the board & appointed by the Minister; 7 representatives elected by growers & appointed by the Minister, amendment- approved by National Assembly; 3 representatives elected by Millers & appointed by the Minister, amendment 2 representatives-approved by National Assembly; Permanent Secretary of the responsible Ministry being Agriculture; Permanent Secretary Treasury; Director Agriculture; amended - three members who shall be nominated by the Minister following a competitive and transparent process, approved by the National Assembly and appointed by the Minister. C.E.O of the board as an ex-officio Note: the board mandated to elect a vice-chairperson
Uganda	Draft Uganda Sugar Bill 2016	Proposed Uganda Sugar Board as 1st June 2015; Chairperson Permanent Secretary MTIC Permanent Secretary MAAIF Permanent Secretary MFPED 5 Miller representatives 2 Grower representatives

Key Issues & Lessons: Globally, distribution of earnings in global value chains is about power relations. In the context of the proposed representation on Uganda's Sugar Board, the following questions need to be carefully explored to constitute a fairly representative board; (1) Where is the balance of power in the proposed representation on Uganda's Sugar Board, especially Millers vis-à-vis Growers?. S.A & Tanzania presents a balance of power between out-growers and millers, only Kenya presents a tilting of power where out-growers are more than millers possibly because the out-growers contribute highest on cane supply relative to nucleus estates.

Resolutions: PART II – UGANDA SUGAR BOARD DRAFT BILL 2016 Agreed Positions MTIC Meeting 30th March 2016

(1) Millers and Growers representation be equalized as partners in business for meaningful decision-making by CONSESUS in the industry, i.e., 4 Millers rep: 4 Out-growers rep;
(2) Members to be elected by their respective organisations i.e, millers and growers associations for appointment by responsible Minister. *The idea of hand-picking representatives on the board by Minister as seems suggested earlier draft bills is not permissible as it is designed to staff the board with 'puppets'.*
(3) Chairmanship rotation between millers and growers elected from board representatives during board term;
(4) Once a person has assumed position of Chairmanship, the respective constituency will replace him/her with a new member on the board;

(5) Government representatives to play advisory role and guidance on the board rather than directly taking sides while voting on crucial decisions. (6) Establishment of Sugar Board with Full Powers Not an Advisory Board/Council (as proposed at MTIC meeting above) that will be subject to power abuse; i.e., 'remote' controlled to serve interests of the Sugar barons through the Minister. *Note: the Sugar Development Fund (industry levy) in the proposed framework (see last page of this report) be used to support the Sugar Board functions.*		
Policy Issue: Property Rights Ownership - Ring Fencing Policy 'One Mill per 25 kilometre radius'		
South Africa	N/A in the Act	
Tanzania	N/A in the Act	
Kenya	Sugar Act 2001	Part 1 defines as "zone" means the area within a radius of up to a maximum of forty Kilometres of a sugar mill; A case practice of mill licensing exist, whereby regulator registered 2 more sugar mills in the Mumias zone to also produce ethanol & co-generate power, i.e., West Kenya and Mundika. The registration by the directorate was based on an evaluation carried out prior to registration of the three companies indicated that the area had the potential to accommodate additional factories. Therefore, Mumias objection application for licensing 3 more mills citing the zoning sugar act was rejected by the regulator citing that the area had a potential to sustain all the industries. **Part V Clause 30 'Rights of growers'** 51 % shareholding of all privatized sugar factories; 51 % representation on the Boards of Directors of milling companies.
Uganda	Draft Uganda Sugar Bill	Zone defined as one mill per 25 kilometer radius. *This provision contravenes the free market spirit which Uganda pursues. Current challenges: delays in harvesting out-growers cane at times up to 30 months, uncompetitive prices, mill capacity cannot handle cluster production capacity, dry spells out-growers losing a lot of cane due to fires which cane cannot be timely harvested and delivered to mill due to inadequate mill capacity coupled with haulage and mechanical harvesting inadequacies thus farmers end up losing a lot of investment funds and revenue without recourse for compensation, low prices to farmers due lack of alternative market for cane, etc., This calls for the dismantling of the ring fencing policy.*
Key Lessons: A case study of Umufolozi Sugar Mill in South Africa shows that despite liberal reforms it		

is a co-operative based arrangement.
A case study of one the world best sugar producer in the world emanates from USA; the architect & preacher of liberal reforms. What we find here is that the Sugarcane Growers Co-operative of Florida Belle glade is vertically integrated, and co-owns the largest refining sugar company in the world; American Sugar Refining Inc. The Sugarcane Growers Co-operative jointly with the American Sugar Refining Inc also operates 8 sugar refineries across North America & Europe.
In both case studies above farmers sell cane to the mill but they receive more revenue from processing on pro-rata value of cane delivered to mill by each individual farmer, and thus promoting equitable value chain wealth distribution.

The Kenyan zonal modal takes care of area productivity and/or production potential in determining number of mills to be licensed in an area with regards to mill crushing capacity. If properly implemented enables growers cane to be timely harvested fostering regular revenue. Growers entitled to shares in privatized mills and representation on all mill boards.
The ring-fencing policy in Uganda violates individual fundamental property rights ownership enshrined in the Constitution by attaching private property(land) to another individual 'investor' without consent and absence of an institutionalized sound regulatory framework to guard against abuse and exploitation. This lacuna in the law tot amounts to the Government of Uganda overstepping its mandate and exposing itself to legal battles and heavy compensation to the affected citizens.

Market forces would be the best option however where the Ring Fencing Policy is to be applied, then the following investment arrangements are proposed/ ***Resolutions: PART V LICENSING OF SUGAR MILLS***

- An affirmative INDEGENOUS INDUSTRIALIZATION policy that reserves at least thirty (30) percent of the zoning area production potential only for Ugandans to invest in licensed Jaggery, open pan mills and small scale mills to facilitate acquisition of knowledge, skills and appropriate technology. This strategy will lead to Equitable & Inclusive Economic Growth; **Note:** ***zoning policy that does not take care of Indigenous entrepreneurs/investors should be treaded on with care as it will subject Ugandans to perpetual slavery as commodity producers, i.e.,' land is a birth right for Ugandans therefore implementing zoning without caution will be like the Biblical Esau giving his birth rights to Jacob.***

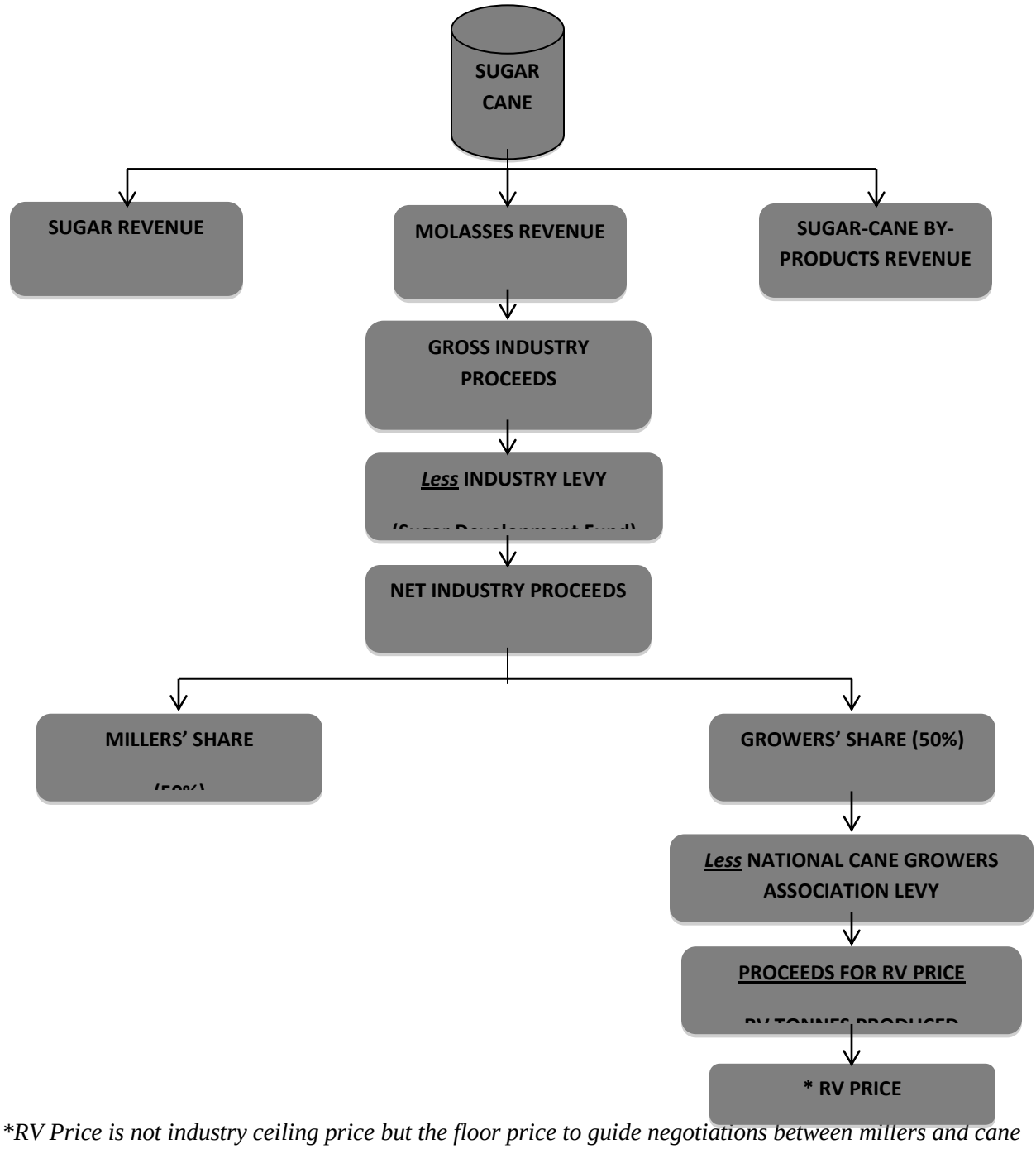
- Investments by foreigners should be for larger sugar mills not less than 2000 TCD;
- No single investor permitted to obtain licenses in close neighborhood to his/her existing plant for purposes of encouraging fair competition;
- Independent farmers growing cane on commercial scale are free to negotiate and sale their cane to the highest buyer, as per Sugar Policy 2010 clause 4.2 (iv);
- Farmers shall be encouraged to form Co-operatives Societies to enable them to; strengthen members bargaining powers, as well as access technical guidance and capacity building services, as per Sugar Policy 2010 clause 4.2 (viii);.
- Contracted out-grower representation on Mill Boards.
- Zoning should not be based on circular rings as it distorts placement of plants given a fact that some areas lack utilities such as power, water etc., to serve the plant. Instead industrial clusters which is an established international business norm be the basis for zoning a region based on production potential to determine number of plants to be established in that region, i.e., this is

similar to business & industrial parks concept by Uganda Investment Authority; • Note: The above resolutions are in line with the current National Sugar Policy 2010 which states as follows: ➢ Economic interdependency between the sugar manufacturers and sugarcane growers, clause 3.3 (1) ➢ Market forces shall determine sugarcane as well as its products' prices, clause 3.3 (2) ➢ Equitable distribution of productive enterprises nationally, clause 3.3 (4) ➢ Equitable sharing of revenue from sugar and its by-products, clause 3.3 (5) ***Therefore, the out-growers associations emphasize that all these Guiding Principle clauses in the National Sugar Policy should be the basis for informing the drafting exercise and be embedded in the National Sugar Act 2015.***		
POLICY ISSUE: Equitable Sharing of Revenue among Value Chain producers - **Cane Payment System**		
South Africa	Sugar Industry Agreement 2000	Sugar Industry Administration Board; 1 representative by SASA 2 representatives by Millers 2 representatives by Out-growers Recoverable Value (RV) Formulae; Farmers receive 64 percent: Millers 36 percent of the mill sugar and molasses proceeds. *Currently under review to match industry needs.*
Tanzania	N/A	Best practices in industry are attributed to Kilombero whereby division of proceeds system is farmers 57 %: Miller 43% based on actual sales achieved for sugar and molasses. IDRC Industry Report (2014) indicates farmers 53 – 56.5%: Millers 43.5-47%
Kenya	The Sugar Act 2001	PART 3 Clause 8 (1) Cane Pricing Policy. The mandate is by the Sugar Cane Pricing Committee comprising representatives: Kenya Sugar Board, Kenya Sugar Manufacturers Association, and Kenya Sugarcane Growers Association. The committee reviews sugar cane prices annually and formula based on sucrose content. Farmers share 50 percent, rendement not below 10 percent (see Kenya National Assembly Official Record -Hansard) 14 Dec 2010. Question No. 562
*Mauritius *(included only in this section for better analysis)*	The Mauritius Cane Industry Authority Act 2011	Clause 20 Control & Arbitration Committee: (a)a chairperson who is, and has for at least 10 years been, a judicial officer, a law officer or a barrister; (b) a representative of the Board; (c) a representative of the Ministry; (d) one independent member; (e) one representative of millers; and

		(f) two representatives of planters, one of whom shall be a representative of small planters. ***<u>Clause 39 Planters and Millers entitlements:</u>*** (a) every planter entitled to receive for his canes 78 per cent of the quantity of sugar from his canes basing on yield according to the average efficiency of all factories. (b) where the efficiency of the factory where the canes have been milled is higher than the average efficiency of all factories, the planter shall, in addition be entitled to receive 50 per cent, and the miller the remaining 50 per cent, of such quantity of sugar actually produced from the planter's canes. (c) the average quantity of scums produced by the factory per ton of canes milled during the preceding crop year; and (d) 100 per cent of the molasses produced by the factory per ton of canes milled by the factory during that crop year.
Uganda	Draft Uganda Sugar Bill 2016	Price sugar cane = C x R x 40% see Schedule 3, 40% being farmers share. Formula based on mill sugar only. ***Draft 16th March 2015 Part VII Clause 22 (2c)*** *states ' a formula for determining the price to be paid by millers to growers for sugar cane or any other designated agricultural produce, which may include any factor related to the sale or other disposal of sugar industry products'.* ***Surprisingly, this clause was omitted in the draft of 1st June 2015. This clause requires re-instatement in the current bill***
Key Lessons: Worldwide most farmers earn in range of 60-65 percent while millers earn 35-40 percent of the sugar industry proceeds (see ***World Association of Beet & Cane Growers Association, Report 2015***). This happens to be the reverse trend in Uganda. In Ugandan context, the 40% is based on mill sugar alone (exclusive of sugarcane other products) implying that farmers earn less than 40% of the sugarcane proceeds. ***Resolution:***, the value that will be shared between farmers and millers should take care of Sugar and all the Sugar by- products such as Molasses, Bagasse for Power Generation and mud-fertilizer based on a particular mill recoverable values (RV). A share formula of proceeds to match worldwide and regional trends reveals Farmers 60-65%: Millers 35-40%. The industry framework is proposed below to guide the formulation of the Price Formulae. Rendement be fixed in range of 9-11 as per sugar policy 2010. In the MTIC Meeting 10th March 2016 (Agreed 50% Farmers: 50%Millers).		

PROPOSED SHARE OF SUGARCANE INDUSTRY FRAMEWORK BELOW:

CALCULATION OF THE RV PRICE



**RV Price is not industry ceiling price but the floor price to guide negotiations between millers and cane producers*

Other Important Issues:

- A sub-committee for determining sugarcane price be constituted with equal representation of growers and millers.
- Establishment of a **National Cane Research Institute** for development of seed cane varieties to match the changing weather patterns. Part of the **Sugar Development Fund (industry** levy) in the framework below could be used to support the research institute.
- The issue of weighbridge monitoring and inspection team to be under the mandate of the cane pricing committee.
- A Standardized guiding Cane Production Contract (CPC) be developed and revision be done with common basic principles across the country.
- WHT be exempted from sugarcane farmers given the fact that cane farmers are struggling with paying land development loans with interest. If this is implemented farmers will shy away from cane farming as a business. Further, the taxes paid by millers are a direct result of cane supplied by famers.
- Transfer of sugarcane farmers to the responsible Ministry of Agriculture, Animal Industry and Fisheries

Acknowledgement: information extract from multiple sources; The World Association of Beet & Cane Growers (WABCG) – France and the International Sugar Organization (ISO)- UK of which both Uganda is a member, The International Society of Sugarcane Technologists (ISSCT) – Mauritius, The South African Sugarcane Technologists Association (SASTA)- South Africa and a PhD Study program at the Graduate School of Business – University of Cape Town, South Africa.

FOR GOD AND MY COUNTRY

Appendix 7: Petition letter on draft sugar bill 2016 to the Speaker of Parliament of Uganda

UGANDA SUGARCANE GROWERS' ASSOCIATIONs
c/o P.O. BOX 213 – MASINDI,

14th February 2017

The Rt. Hon. Madam Speaker,
Parliament of the Republic of Uganda,
KAMPALA

Thru: The Hon. Chairperson,
Bunyoro Parliamentary Caucus
Parliament of the Republic of Uganda,
KAMPALA

RE: PETITION ON KEY CLAUSES IN THE UGANDA SUGAR BILL 2016

On Thursday 02nd February 2017, we held a meeting at the Committee Room, 3rd Floor, South Wing - Parliamentary Building with the Bunyoro Parliamentary Forum in which Mr. Michael Mugabira as lead presenter presented the key contentious issues in current Sugar Bill 2016 tabled before Parliament by the Minister of Trade, Industry & Cooperatives on 19th January 2017.

The Honorable Members of Parliament commended the issues and recommended to bring them to the attention of the Rt. Hon. Madam Speaker for the Parliament of the Republic of Uganda.

Therefore, we the undersigned Chairpersons of the Sugarcane Growers Associations in Uganda, acting on behalf of sugarcane out-growers in Uganda supplying sugar factories with over 70% of sugarcane required to run the factories' business year draw your attention to the following:

a) **Unethical Behaviors in Crafting Sugar Bill 2016:** The current Sugar Bill 2016 presented before you by the Ministry of Trade Industry and Cooperatives (MTIC) does not reflect aspirations of the sugar cane growers/farmers due to underhand methods that were used in the drafting process as per our petition letter to your office dated 17th July 2015. It is against this background that we advocate for the proposed government representatives on the sugar board to act as technical advisors and not wield any voting rights.

b) **Board Governance:** The Bill before you puts Board Governance Power in the hands of Millers at the expense of Growers with the intention of continued exploitation of growers despite the meeting held at MTIC on 10th March 2016 which resolved for a balanced governance power sharing between millers and growers through equal board representation. Numerical representation - a reflection of Governance Power cannot be over emphasized before this **August House** as Power determines the appropriation and distribution of wealth created in the value chain sugar industry;

c) **Enactment of an INDEGENOUS INDUSTRIALIZATION POLICY:** The zoning policy 'ring-fencing of markets i.e., one sugar mill per 25 kilometer radius' without a prescribed expiry time framework does have the consequence of enriching the few and foreign based investments, as Ugandans will be subjected to perpetual slavery as commodity producers on their own land since the law will be restricting them from engaging into the lucrative Value Addition investments. It should be noted that ***land is a birth right for Ugandans therefore implementing zoning without caution will be like the Biblical Esau giving his birth rights to Jacob.*** Therefore, we are proposing an affirmative INDEGENOUS INDUSTRIALIZATION POLICY that reserves at least thirty (30) percent of the zoning area production potential only for Ugandans to invest in licensed Jaggery, Open Pan Mills and small scale mills with possibilities for up-grading to facilitate acquisition of knowledge, skills and appropriate technology with intent to build production capabilities. This strategy will re-dress the current In-equitability and lead to Equitable & Inclusive Economic Growth in Uganda's Sugar Industry;

d) **Sugar Cane Pricing Formulae:** Sharing of sugar and its by-products proceeds between growers and millers is an international practice guided by a percentage share formula. The World Association of Beet & Cane Growers (Paris-based) and the International Sugar Organization (London-based) published a 2015 report covering sugarcane and beet growing countries in the world. The report revealed that the value of share percentage in the ***formula for cane growers ranged from 50 to over 70 percent.*** It is unfortunate that despite the sugar factories having exploited Ugandans for the last decades, the Sugar Bill 2016 Schedule 3 is proposing a value share based on sugar milled only of just 40 percent for cane growers, yet it TAKES CANE FARMERS APPROXIMATELY 2 YEARS FOR CANE TO MATURE AND READY FOR MARKET. Millers on the other hand only need 24 HOURS TO CRUSH THE CANE after buying it from cane farmers! It goes without saying that cane farmers are taking the lion's share of risk by investing for 2 years before marketing the cane, and yet the Sugar Bill 2016 Schedule 3 proposes giving them a smaller share of the value created. Our proposal, which was documented at the MTIC meeting of 30th March 2016 and agreed upon, suggested a minimum of 50 percent share, based on a comprehensive value-sharing model that includes all sugarcane by-products being produced by the particular sugar factory to match the World Sugar Producing Country Standards.

e) **Sugar Board vs Advisory Council:** Lack of leadership is being demonstrated by proposals for an Advisory Board/Council instead of establishment of Sugar Board with Full Powers. The argument being advanced is that a Sugar Board will be expensive and bureaucratic to manage. We do object to the proposal of an Advisory Board/Council (as proposed at MTIC meeting above) as this will be subject to power abuse; i.e., 'remote' controlled by those intent to serve the interests of the Sugar barons. Putting a structure that doesn't have full power, such as the proposed Advisory Board/Council is actually an expensive option when we consider the real issue that we are attempting to address, such as inequitable distribution of value within this industry. Such a body is unlikely to effectively represent the interests of the Ugandan sugar cane growers, which has the effect of perpetuating the current inequitable distribution of sugar cane value in favour of millers, while at the same time burdening the farmers with the huge cost and risk of growing sugar cane for two years before marketing. That should be the real cost under consideration here, and not the cost of having an effective body such as the Sugar Board. In fact, we propose that the Sugar Development Fund (say a 5 percent levy) should be used to finance the Sugar Board, and related sugar industry development activities;

f) **Suitable Ministry for Cane Growers:** Transfer of growers from MTIC to MAAIF so that cane crop can be prioritized by Government for funding and research development;

g) **Double taxation:** Growers supply cane to factories for milling sugar and its by-products that are taxed by government. Therefore, the introduction of withholding taxes to cane growers' amounts to double taxation, which invariably worsens their already weak financial position and sustainability.

h) **Re-dressing Monopoly/ Monopsony in Bunyoro Region:** Unlike in Busoga region were licenses were issued to competing investors under fair competition rules as prescribed by the sugar policy 2010, in Bunyoro the policy was grossly abused by issuing licenses to one investor, namely Kinyara Sugar Ltd, with the consequence of this company dominating the whole of Bunyoro region. This situation has hindered other competing players to enter the market due to the monopoly power bestowed on the Kinyara Sugar Ltd by the unfair competition rules. As such, this has contributed to the massive exploitation of cane farmers, as evidenced by low cane prices, harvesting over grown cane due to lack of alternative markets, loss of cane to fire during drought without due compensation from Kinyara Sugar Ltd nor Government, among others. Therefore, we propose that another license be issued to growers so that they can identify a suitable investor to partner with in setting up sugar factory in the region in order to promote fair competition in the sugar industry.

Hon. Madam Speaker, in addition, to the above key aspects for consideration in the Sugar Bill 2016, below we present specifics for revision in the Sugar Bill 2016:

CLAUSES IN SUGAR BILL 2016	PROPOSED AMMENDMENTS
PART II UGANDA SUGAR BOARD **CLAUSE 3 COMPOSITION OF THE BOARD**	
Clauses a, b, c and d are ok.	Clause b, c and d 'government officials will have no voting powers/ act as advisors
e) Five representatives of millers	Four representatives of millers
f) Two representatives of growers	Four representatives of growers
Clause 3 (3) the chairperson shall be appointed from the private sector and shall be a person with knowledge and experience of the sugar industry	The chairperson shall be elected from growers and millers on a rotational term basis and a replacement done within where the chairperson has been elected
PART V LICENSING OF MILLS	
Clause 21 additional clauses required	No single investor permitted to obtain licenses in close neighborhood to his/her existing plant for purposes of encouraging fair competition; Where the Board perceives lack of fair competition in a region, a license may be granted for purposes of breaking monopoly and/or monopsony for effective and fair competition.
Clause 22(1) in licensing sugar mills, the Board shall ensure that there is one mill in a zone	In licensing sugar mills, the Board shall ensure that 30 percent of zone production potential is reserved for jaggery, open pan mills and small scale mills for indigenous proprietors only for purposes of knowledge, skills and appropriate technological transfer due to presence of one big mill. For avoidance of doubt big sugar mills not less than 2000 TCD;
Clause 22(3) in this section, a "zone" means an area of a radius of twenty five kilometers	A zone means an area of a radius of twenty five kilometers but placement of mills should not be based on circular rings as it distorts

measured from one mill to another	placement of plants given a fact that some areas lack utilities such as power, water etc., to serve the plant. Instead industrial clusters (which may combine a number of zonal areas) which is an established international business norm be the basis for determining number of plants to be established in that region, i.e., this is similar to business & industrial parks concept by Uganda Investment Authority;
Additional important clauses missing in the current bill yet are in the sugar policy 2010:	Independent farmers growing cane on commercial scale are free to negotiate and sale their cane to the highest buyer, as per Sugar Policy 2010 clause 4.2 (iv); Farmers shall be encouraged to form Co-operatives Societies to enable them to; strengthen members bargaining powers, as well as access technical guidance and capacity building services, as per Sugar Policy 2010 clause 4.2 (viii);. Contracted out-grower representation on Mill Boards (not in policy but critical).
PART VII SUGAR CANE PRICING	
Clause 25 (1) the price of sugar cane shall be determined in accordance with the formula set out in Schedule 3.	The price of sugar cane shall be determined in accordance with the formula set out in Schedule 3, where 50 percent is the minimum share for milled sugar and its by-products. Rendement (tons of sugar made per every 100 tons of sugarcane) shall be fixed at 9-11 percent as per sugar policy 2010 in order to enhance factory efficiency.

Hon. Madam Speaker, we therefore request for your intervention in this matter so that aspirations of Uganda's Cane Growers are given due respect and consideration in the review of the Uganda Sugar Bill 2016, so that we build a sugar industry that promotes equitable and inclusive economic growth for all the value chain participants.

APPENDICIES:

1. **Key Policy Country Case Studies Relevant to the Crafting of the Draft Uganda Sugar Bill 2016**
2. **How is the Value of Beet and Cane Shared between Growers and Factories throughout the World?** ***Report 2015 by World Association of Beet & Cane Growers – Paris and International Sugar Organization – London***
3. **Paper Extract: Sugarcane Production Costs in Uganda.** ***Proceedings of the International Society of Sugar Cane Technologists (ISSCT Congress), volume 29, 2016. Thailand***
4. **Draft Minutes of the Consultative Meeting with the Hon. Minister of Trade, Industry and Cooperatives with the Stakeholders to discuss the Draft Sugar Bill at Farmers House on Thursday 10th March 2016.**

Robert Atugonza

Chairperson Board Masindi Sugarcane Growers' Association Limited (MSGAL)

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Ojwang David Omboko

Chairperson Board Busoga Sugarcane Growers' Association Limited

Michael Imaka Mugabira (PhD Candidate-GSB/UCT)

Coordinator – Uganda Sugar Cane Growers' Associations

Copies:

Hon. Minister of State for Economic Monitoring – Office of the President
Hon. Chairperson Committee on Trade, Tourism & Industry – Parliament of Uganda
Hon. Chairperson Busoga Region Parliamentary Forum

FOR GOD AND MY COUNTRY

Appendix 8 Lesson from Uganda's sugar industrial crisis

24 NEW VISION, Thursday, January 5, 2017

BUSINESS & TENDERS

Opinion

What we learn from sugar crisis

Michael Mugabira, PhD candidate at the University of Cape Town

Currently, the local media is awash with stories depicting sugar crisis in the country. Possible solutions being fronted by Ministry of Trade, industry and Co-operatives include; banning sugar imports, it is possibly to issue licences for importation in order to stabilise the sugar prices. Some sugar barons known in the industry keep lobbying the trade ministry for a ban to import sugar. However, the supporters for the zoning policy cite countries in which it is implemented but they deliberately fail to shed light on how governments in those countries get involved in the entire value chain to ensure that there is an equitable sharing of revenue from sugar between millers and growers for industry sustainability and competitiveness. This has led to a lot of confusion in the crafting of the Uganda Sugar Act 2015. The same experts advocate for zoning protectionism but when it comes to the sugar pricing, they want a free market (price determined by demand and supply). It is ironical how a free market economy would operate in a country where there are no markets for their cane supply and without a sound pricing mechanism through which the farmers have no alternative but to sell their cane at a price formulate, they say they prefer a free market (price determined by demand and supply). It is ironical how a free market economy would operate in a country where there are no markets for their cane supply and without a sound pricing mechanism through which the farmers have no alternative but to sell their cane at a price formulate, they say they prefer a free market (price determined by demand and supply).

A sound pricing regulatory regime would be crucial in ensuring the sugar prices stable

Some experts advocate for zoning protectionism, but when it comes to the sugar pricing, they want a free market, in which the price is determined by demand and supply

Process sugar within

The current cane in Bunyoro region, if was crushed at the sugar factories would also mean that there would be no need for importing sugar.

Benchmarking

The key stakeholders in the industry including national legislators from the sugar growing areas and the agricultural sector to countries, such as Mauritius, India and Thailand so that provisions in the Draft Sugar Act 2015 are debated in Parliament

Equip farmers with skills

Can the sugar barons in Uganda offer plausible explanations why a typical small scale sugarcane farmer of less than eight hectares in Bunyoro region who is equipped with knowledge, skills and appropriate technology, which was transferred to the so called model, yet our sugarcane farmers in Uganda are still using the hoe and panga, which is the sugar industry being in existence for decades?

Sugarcane growers should be empowered with better skills and technology to help them fight poverty

Importing is not a solution

Sugar importation strategy means the country will pay out foreign currency yet as a country that exports sugar, creates a trade imbalance.

Build factories near sugarcane farms

If favourable climate for sugarcane growth could be sustained, then integrated sugar industry development models, that involve sugar mills, sugar refineries, paper and chip board processing plants from sugar bagasse could be located in the region, with the involvement of Uganda Development Corporation, to boost the capabilities of indigenous entrepreneurs

This region has gone through ring-fencing policies, which have been abandoned and it is now being transported for several kilometres at raw material for factories. Let us learn from what lessons does the sugar crisis and policy failure offer to us?

Appendix 9 Tabling draft Sugar bill 2016 before Parliament

400 jobs Vacancies in health ministry, Mpigi, Soroti...

New Vision

UGANDA'S LEADING DAILY

Monday, January 23, 2017 Vol 33 No 016 Price: USH 2,000 (KSH 107, TZSH 1,600, RF 933)

New measures to control sugar industry unveiled, page 7

GOVT TO REGULATE SUGARCANE PRICES

EDUCATION

NATIONAL NEWS

NEW VISION, Monday, January 23, 2017 7

A man standing before his sugarcane plantation in Mayuge district. Photo by Gerald Tenywa

Govt to regulate sugarcane prices

ON THE GROUND

- The Minister of Trade, Industries and Co-operatives, Amelia Kyambadde, tells Parliament that currently, there is no comprehensive law regulating the sugar industry. As a result, there is lack of proper regulation and hence disharmony among the key players in the industry.

By Nicholas Wasasila

The Government is to start regulating the prices of sugarcane in the country, according to a new bill tabled in Parliament.

The Sugar Bill 2016 aims at introducing harmonised and modern legal frameworks to enable the sugar industry develop in a competitive, but orderly manner.

It provides that sugarcane outgrowers shall be paid for their sugarcane in accordance with the formula set out in schedule 3 of the Bill, but a sugar manufacturer and a supplier may agree on a price higher than that calculated using the formula provided for in the formula.

However, the Bill, which was tabled on Thursday afternoon by the Minister for Trade, Industries and Co-operatives, Amelia Kyambadde, stresses, that in case of a sugar industry agreement setting the price, a supplier may not be paid a price lower than that calculated using the formula provided by the law.

The formula to determine the price of sugarcane is: Price of sugarcane = Base price + premium + incentives - penalties.

The base price is the price per metric ton of sugarcane and the percentage to be negotiated by concerned parties as decided by the board, of which the minimum shall be 70 per cent.

The Bill comes against the backdrop of occasionally fluctuating sugar prices.

In December last year, the average retail price of sugar, that on supermarket shelves, was sh2,900 and sh3,000, skyrocketed to sh5,000 And has since gone down to about sh4,500. The last time a kilogram cost sh5,000 and above was in 2011.

Industrial experts attribute the rise in sugar prices to festive season shopping, speculation, higher demand than supply from neighbouring countries, and low production.

During the impasse, the sugar manufacturers accused traders of hiking the prices and the traders claimed the manufacturers were selling sugar to them at high prices, while others blamed the rise on the hiking of local sugar to give leverage to imports.

Sile has called for the Sugar Bill to be fast-tracked to avoid shortfalls in sugar supply.

Kyambadde also told Parliament that currently, there's no comprehensive law regulating the sugar industry, as a result there is lack of proper regulation, hence disharmony among the key players in the industry.

David Kuza, the officer in charge of the sugar desk at the trade ministry, explained that the reason why there is only one sugar mill in a zone within a radius of 25km.

It further requires growers, outgrowers and other stakeholders in the sugar industry to enter into a sugar industry agreement that will, among others, set out rights, duties and obligations.

The chairman of the Uganda Sugar Manufacturers Association, Kaushik Gandhi, said: "Due to many sugar mills being concentrated in one place, the demand for sugarcane in the availability of sugarcane by stopping crafty millers from poaching on outgrowers.

Other key provisions of the Bill

The Bill also provides for the establishment of the Uganda Sugar Board (USB), which will among others, support the sugar millers development of outgrower and monitor the domestic sugar market with a view to identifying and addressing any distortions in the market.

According to Kyambadde, no one shall establish or run a sugar mill or plant without a valid licence issued by the Board.

Persons who do not acquire the licence from the board shall be liable to a fine not exceeding five hundred currency points (about sh10m). The mill or plant shall immediately be closed down and the licence withheld.

In licensing, the board shall determine whether applicants have sufficient knowledge and experience in the industry and through a new policy, sanity will prevail, Bakunye added.

Additional reporting by George Bita